# THE ECONOMICS OF LABOUR

# MANAGED FIRMS

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# C O N T E N T S

PART B: EMPIRICAL EVIDENCE FROM COOPERATIVES WORKING WITHIN CAPITALISM

PART C: (continued)

## SYNOPSIS

This thesis argues that Western theories of labour-management, which are predominantly neoclassical, do not capture the major economic forces operating at both firm and macro levels. Consequently the conclusions derived from the theory are often incorrect and also lead to erroneous policy prescriptions, both for the cooperative working within capitalism, and for the labour-managed economy.

The thesis opens with a summary of neoclassical theories of the labour-managed firm, and theories of cooperative failure. The validity of these theories are tested using evidence drawn from the C.P.F. cooperatives and a sample of similar capitalist firms over the period 1950-79. The evidence lends very little support to the theories.

The following chapters describe the actual experience of the cooperatives and capitalist firms over the thirty years, and concludes that the major differences between the C.P.F. cooperatives and capitalist firms are missing from neoclassical models.

The final section of the thesis considers macro economic theories of the labour-managed economy. It is argued that the failure of neoclassical analysists to present convincing macro economic theories of labour management is because of the rift between conventional micro and macro economics. The introduction of labour management is a change at the firm level, i.e. micro economic level which, using conventional economic theory, cannot be traced through to the macro economic level.

As an alternative, Sraffa's analysis of a capitalist economy is adapted to labour management. This allows an analysis of how

changes at the firm level effect macro economic conditions.

The results derived from the application of a Neo-Ricardian model are found to be very different from those produced by neo-classical analysis. In the final chapter it is noted that existing empirical studies of Yugoslavia which claim to provide evidence of the behaviour predicted by neoclassical models do not provide conclusive evidence.

The conclusion contrasts the policy prescriptions derived from neoclassical analysis of labour management, with recommendations derived from the alternative analysis presented in this thesis.

# LIST OF ABBREVIATIONS

## A. In the Text

| | |
|---|---|
| B.F.M.F. | British Footwear Manufacturers Federation |
| B.P.I.F. | British Printing Industries Federation |
| B.S.C. | British Shoe Corporation |
| C.E. | Capitalist Economy |
| C.F. | Capitalist Firm |
| C.P.F. | Cooperative Producers Federation |
| C.R.S. | Cooperative Retail Society |
| C.W.S. | Cooperative Wholesale Society |
| E.A.G. | Economists Advisory Group |
| F.A. | Fixed Assets |
| F.I.S.S.G. | Footwear Industry Study Steering Group |
| G.D.P. | Gross Domestic Product |
| I.P.S. | Industrial and Provident Societies |
| I.C.C. | Inter-Company Comparisons Ltd. |
| L.M.E. | Labour Managed Economy |
| L.M.F. | Labour Managed Firm |
| M.E.C. | Marginal Efficiency of Capital |
| M.P.K. | Marginal Product of Capital |
| M.P.L. | Marginal Product of Labour |
| O.E.C.D. | Organisation for Economic Cooperation and Development |
| P.C. | Producer Cooperative |
| P.M.V. | Plant, Machinery and Vehicles |
| R.P.I. | Retail Price Index |
| R.P.S. | Real Potential Surplus |
| S.D.N. | Scottish Daily News |
| S.M.A. | Self Management Agreement |

## B. Neoclassical Models

| | |
|---|---|
| i | Rate of interest |
| H | Time horizon in years |
| K | Capital measured in physical units |
| L | Labour |
| M | Materials |
| N | Number of years for which an investment is productive |

/ ....

| | |
|---|---|
| $P_F$ | Price of purchasing one unit of capital |
| $P_K$ | Rent of one unit of capital per production period |
| $P_M$ | Price per unit of material |
| $P_X$ | Price per unit of output |
| S | Surplus earned by capitalists |
| W | Wage Rate |
| X | Output |
| Y | Income per worker |
| $\pi$ | Profit |

c. Neo-Ricardian Models

| | | |
|---|---|---|
| A | Matrix of Input Coefficients | |
| a | Row vector of employment of labour by industry | |
| B | Matrix of Output Coefficients | |
| $L_c$ | Labour value of corn | |
| $L_g$ | Labour value of gold | |
| $L_i$ | Labour value of iron | |
| $P_c$ | Price of one unit of corn | in a capitalist economy |
| $P_g$ | Price of one unit of gold | |
| $P_i$ | Price of one unit of iron | |
| $p^m$ | Flow vector of prices | |
| $P_n$ | Price of new machines | |
| $P_o$ | Price of old machines | |
| r | Rate of profit | |
| W | Wage rate money units | |
| Y | Labour income in money units | |

| | | |
|---|---|---|
| $\rho_c$ | Price of one unit of corn | in a labour managed economy |
| $\rho_g$ | Price of one unit of gold | |
| $\rho_i$ | Price of one unit of iron | |
| $\rho^m$ | Row vector of prices | |
| $\rho_n$ | Price of new machine | |
| $\rho_o$ | Price of old machines | |
| $\omega$ | Real wage rate. A column vector of goods. | |

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# INTRODUCTION

In this thesis it is argued that Western theories of labour-management, which are predominantly neoclassical, do not capture the major economic forces operating at both firm and macro levels. Consequently the conclusions derived from the theory are often incorrect and also lead to erroneous policy prescriptions, both for the cooperative working within capitalism, and for the labour-managed economy.

An alternative analysis of the workings of labour management is suggested, based on a more realistic understanding of the behaviour of firms in a market economy. Next, Sraffa's method of describing a capitalist economy is adapted to the case of labour management. This enables a more valid comparison of the theoretical performance of the labour-managed and capitalist economies. Furthermore, his method can easily be adapted to assist in an understanding of the economic problems faced by Yugoslavia today.

The usual method employed by Western economists writing on labour-management is to substitute the standard assumption of profit maximization by a capitalist firm with that of maximization of income per member for the labour managed firm. All other neoclassical assumptions are retained.

Since Ward's initial article in 1958[1], the theory of labour management has developed along predictable lines, mirroring that followed by the theory of the firm. Thus, the literature first described simple one period optimization models, and more recently has advanced into the fields of utility, uncertainty, and inter-temporal maximization. The most important conclusions derived

from the neoclassical theory of labour management are briefly discussed in Chapter 1.

A major concern of the literature has been to compare the behaviour and efficiency of the theoretical labour managed and capitalist enterprise. Using neoclassical theory, the labour managed firm compares badly with its capitalist counterpart. As explained in Chapter 2, we need drop only one assumption about the capitalist firm to remove the theoretical differences in the performance of the two types of enterprises. This assumption is that the level of wages paid by capitalist firms is determined in the market, and that employees cannot influence the level of their wages.

An important strand of Western theories of labour management has been concerned with explaining the apparent failure of cooperatives working under capitalism. These explanations include both neoclassical models and more pragmatic analysis. The literature on failure is outlined in Chapter 3.

Chapters 4 to 6 set out to test empirically the Western theories of labour management described in the first three chapters. A sample of British cooperatives is compared with a sample of capitalist firms from 1950 to 1979. The capitalist firms chosen manufactured the same products and worked in the same location as the sample of cooperatives. The samples of cooperatives and capitalist firms are described in Appendix 3.

The cooperatives studied were all members of the Cooperative Producers Federation (C.P.F.). These cooperatives were selected because they had been operating long enough for any distinctive qualities of labour management to be distinguished from the formidable start-up problems still being faced by most British cooperatives.

The C.P.F. cooperatives have often been criticised for failing to meet what many consider the most basic requirement of labour management, i.e. that only workers may be members. The C.P.F. cooperatives have external members and it has been argued that this characteristic may cause them to behave like profit-maximizing firms.

External shareholders of C.P.F. cooperatives, however, may only receive a fixed rate of interest on their shares, so that even if they pursue profit maximization they cannot benefit from the profit so achieved. This leads one to expect that even external members, who are nearly always other cooperatives, trade unions, and ex-employees, would not inevitably aim for maximum profits.

Furthermore, as will be argued in Chapter 8, in reality it is not differences in the maximand which result in the different experiences of cooperatives and capitalist firms working under capitalism. The real difficulties faced by cooperatives are very adequately illustrated by the experiences of the C.P.F. cooperatives.

The empirical evidence presented in Chapters 4 to 6 is entirely within the framework of existing theories of labour management. The conclusion from the evidence is that neither neoclassical or other western theories have had any success in explaining the experiences of the C.P.F. cooperatives. Secondly, the one assumption about capitalist firms that distinguishes them from labour managed firms in neoclassical theory, i.e. that wages are fixed, is not supported by the evidence.

Chapters 7 and 8 go on to describe the actual experiences of the cooperatives and capitalist firms from 1950 to 1979, and of the industries in which they operated. A study of the evidence leads to the conclusion that neoclassical theories fail to capture the dominant forces acting on enterprises.

Most firms are caught in a continuous struggle to maintain their outlets. This is usually achieved by growing ever larger. Rather than harmonious production by equal competitors, a market economy is typified by unfair rivalry between unequal competitors. We cannot rely on the most efficient firms to survive, nor can the action of individual firms be expected to benefit the community at large. Chapter 8 concludes that this view of how the market operates is much more successful in explaining both the response of the C.P.F. cooperatives to changing economic conditions, and the reason why so many failed.

Macro economic theories of labour management have generally taken micro economic predictions and simply applied them to macro economic conditions. Such a methodology would usually be considered unacceptable when analysing a capitalist economy. Why then has this method been followed for labour management?

The answer lies in the inexplicable rift between western theories of micro and macro economics. The failure to make any link between the two levels of the economy points once more to the doubtful validity of neoclassical methods. The introduction of labour management is a change at the firm level. Since the dominant western economic theory is unable to link firm behaviour to macro economic conditions, western writers were forced to apply micro economic methods to macro issues. Part C sets out to bridge this gap.

By the end of Part B a picture has emerged of firms in constant struggle. They struggle over both the division of surplus within firms between labour and capital, and over the division of surplus between firms. Sraffa's analysis is well able to capture both of these characteristics.[2]

Chapter 9 adapts Steedman's discussion of Sraffa[3] to the case of labour-management. In this chapter the unrealistic assumption of an equal profit rate across all firms is maintained. This assumption is analagous to the neoclassical assumption of fixed wages and zero long-term profits. It therefore enables a comparison of the theoretical differences between capitalism and labour management from a neoclassical and neo-Ricardian perspective. It also allows a simple base to be built from which more realistic discussions are developed in Chapters 10 and 11. Chapter 9 concludes that neo-classical models of labour management have been misguided when they present labour-management as more inefficient and more inegalitarian than a capitalist system. In fact, in theory at least, labour management is fundamentally more efficient and egalitarian in every respect.

Chapter 10 builds on this Neo Ricardian model of labour management to predict differences that might be expected between the macro economic behaviour of the labour managed and capitalist economies. In Chapter 11 some of the economic problems faced by Yugoslavia are discussed. Literature explaining Yugoslavia's experiences from a neoclassical perspective are contrasted with a neo-Ricardian perception of the forces at work.

In the conclusion it is argued that Western theories of labour management have resulted in policy recommendations which could be damaging both for cooperatives working within capitalism, and for economies aiming for universal labour management.

FOOTNOTES TO INTRODUCTION

1. WARD, B. (1958) "The Firm in Illyria: Market Syndicalism" American Economic Review, Vol. 48.

2. SRAFFA, P. (1960), "Production of Commodities by Means of Commodities". Cambridge University Press.

3. STEEDMAN, I. (1977) "Marx after Sraffa". New Left Books.

PART A:

# NEOCLASSICAL THEORIES OF LABOUR MANAGEMENT

# CHAPTER 1

## NEOCLASSICAL THEORIES OF LABOUR MANAGEMENT

The following is a brief and uncritical survey of the main issues covered by neoclassical theories of labour-management. Mathematical proofs are rarely included as they are readily available in the publications referred to. The pure L.M.F. described in these theories has the following characteristics:[1]

(a) All, and only, workers in the firm are members of the firm.

(b) The members of the firm enjoy the usufruct of the assets of the enterprise, but do not own them.

(c) All decisions about the operation of the firm are made democratically by all members of the firm.

(d) The net income of the firm (i.e. revenue minus all non-labour costs) is shared equally between all members of the firm.

(e) The firm operates under a fully decentralised market mechanism.

(f) There is complete freedom of employment so that all workers may move freely between firms, and firms may admit and shed members as desired.

Needless to say, no firm exists which could satisfy all these conditions. Many authors have considered the consequences of removing one or more of these conditions. We shall begin, however, with a description of the pure L.M.F.

### 1. The Objective Function

Neoclassical theories of labour-management are almost a replica of neoclassical theories of the firm. One characteristic distinguishes the L.M.F. from the C.F. This is the objective function. The L.M.F.

is assumed to maximize income per worker as opposed to profit. Some models replace this objective with utility maximization. Members' utility functions will include their income, but may also include hours worked, intensity of effort, congenial surroundings, etc.

The intention of most authors has been to compare the behaviour and efficiency of the L.M.F. with the C.F. Although many authors have made efforts to adapt models of the L.M.F. so that they may better describe firms in existence, the standard used for comparison is nearly always the pure profit maximizing C.F.

Following this system we may now compare the two objective functions. For a firm with only one output, X, and labour input L, plus two more inputs capital, K, and materials, M, then the C.F.'s objective function is:

$$\text{Max } \pi = P_x X - P_m M - P_k K - WL \tag{1.1}$$

Subject to the continuous and concave production function:-

$$X = F(L,M,K) \tag{1.2}$$

where:

$\pi$ = Profits; $P_x$ = Output price; $P_m$ = Price of one unit of materials; $P_k$ = Rent of one unit of capital per production period; W = the wage rate.

The pure L.M.F., on the other hand, has the following objective function:

$$\text{Max } Y = \frac{(P_x X - P_m M - P_k K)}{L} \tag{1.3}$$

where Y = income per worker.

(Subject to the same production function).

It is a well known result of neoclassical theory that the C.F. will combine inputs in proportions to satisfy the condition that

$$\frac{F_L}{W} = \frac{F_M}{P_M} = \frac{F_K}{P_K} \qquad (1.4)$$

Differentiating equation (1.3) we find that the first order conditions for an L.M.F. maximum are:

$$\frac{\delta Y}{\delta L} = \frac{L\,P_X F_L - YL}{L^2} = 0 \quad \text{or} \quad P_X F_L = Y \qquad (1.5)$$

$$\frac{\delta Y}{\delta M} = \frac{P_X F_M - P_M}{L} = 0 \quad \text{or} \quad P_X F_M = P_M \qquad (1.6)$$

$$\frac{\delta Y}{\delta K} = \frac{P_X F_K - P_K}{L} = 0 \quad \text{or} \quad P_X F_K = P_K \qquad (1.7)$$

It has been shown elsewhere[2] that the second order conditions for a maximum are also met by equations (1.5), (1.6) and (1.7). These three equations may be restated as:

$$\frac{F_L}{Y} = \frac{F_M}{P_M} = \frac{F_K}{P_K} \qquad (1.8)$$

These conditions are almost exactly those described for the C.F. in equation (1.4). Just like the C.F., the L.M.F. will employ all units, including labour, up to the point where the value of the marginal product of each factor is equal to its "price". The difference is that the price of labour, Y, is determined within the model rather than exogenously (see Chapter 2).

Initially the change in the objective function may appear to have very little effect on the model. It is, however, responsible for producing behaviour among model L.M.F.'s which is quite different from

the model C.F. These differences are outlined below.

2. The Point of Production

The pure L.M.F. will face a limited number of points on the production function at which it would choose to operate. The limited alternatives available to the L.M.F. is the result of the determination of each member's income within the model. The neoclassical C.F. accepts an exogenously determined wage rate, W. Any surplus left over after payment to factors will be distributed as profits. The L.M.F. faces the added constraint that payments to factors must exhaust the value of the product. From (1.3) we see that

$$P_X X = YL + P_M M + P_K K \tag{1.9}$$

Substituting conditions (1.5), (1.6) and (1.7), then

$$P_X X = P_X F_L L + P_X F_M M + P_X F_K K \tag{1.10}$$

or

$$X = LF_L + MF_M + KF_X \tag{1.11}$$

It is well known that (1.11) could only hold at points on the production function which are locally linearly homogeneous. Vanek[3] describes the locus of such points for different levels of output as "the locus of maximum physical efficiency". Thus, the L.M.F. always aims to produce at the point of (instantaneous) constant returns to scale, where the average cost per unit of output is minimized.

It is easy to see that the profit maximizing C.F., working under the same conditions, will only combine factors in the same proportions

as the L.M.F. when it is not earning a profit, i.e. when payments to factors exhaust the value of the product. So it is an inevitable conclusion that, when the C.F. is operating under general equilibrium, when perfect competition has forced it to the point of zero profits and local constant returns to scale, the L.M.F. and C.F. will produce at the same scale using the same factor proportions. More than one author has in fact shown that the general equilibrium solution of the L.M.E. and the C.E. will be the same in every respect.[4,5]

Differences in the long-run equilibrium of the two types of firms could only occur under conditions in which the C.F. continued to earn a profit. When the C.F. can make a profit, then its L.M.F. replica would be able to convert its potential profit into additional income for its members. Consequently the income of L.M.F. members would be above the prevailing capitalist wage rate. The reverse would be true when the C.F. is making a loss.

The above analysis has been extended to conditions of imperfect competition.[6] The conclusions remain the same, with the exception that the L.M.F. would now choose to operate at a point of increasing rather than constant returns to scale.

Meade[7] has pointed out that if the L.M.F. is operating under a production function with constant returns to scale, then the L.M.F. will be concerned only to adjust its factor ratios to the desired proportions. It will, however, be indifferent to the scale of output. This is because the maximum income per worker will be the same at any point along the locus of maximum physical efficiency.

It is a well known result that the C.F. operating under constant

returns to scale and earning a profit will attempt to increase output without limit. The L.M.F., on the other hand, would be content to stay at the same scale. This led Vanek to conclude that monopoly power would be less of a problem in an L.M.E.[8]

Recently several papers have appeared which consider the behaviour of the L.M.F. facing price uncertainty in the product market.[9] They all take a similar approach and reach the same conclusions. The firm no longer aims to maximize income, but rather utility, which is a function of expected income. As a result of price uncertainty, the risk averse L.M.F. will employ more labour and produce a larger output for a given level of fixed assets than its L.M.F. twin operating with a certain price. This result is quite the opposite from the model C.F., which has been found to opt for a smaller output in risky conditions.

These results are very much dependent on the assumption that there are only two inputs, K and L. As shown in the section on short-run behaviour, such perversity is far less likely when other inputs may be varied.

3. The Short-Run

Ward[10] was the first person to discuss the short-run behaviour of the L.M.F. He took his definition of the short-run from standard neoclassical analysis, i.e. some period of time during which capital is fixed, but other inputs may be varied.

Ward's model L.M.F. contained only two inputs, labour and capital. From equation (1.5) we know that in equilibrium $Y = P_X F_L$ (1.5)

But it is always true that

$$Y \quad \frac{P_X X - P_K K}{L}$$

therefore

$$\frac{Y}{P_X} = \frac{X}{L} - \frac{P_K K}{P_X L} \qquad (1.12)$$

Now we can ask how the L.M.F. would respond in the short-run to an increase in the price of capital, $P_K$. A rise in $P_K$ will increase the final term in equation (1.12), and so $Y/P_X$ will fall. In order to return to an equilibrium in which $Y/P_X = F_L$, the l.m.f. must adjust L so as to reduce $F_L$. Since the production function is taken to be concave, i.e. $F_{LL} < 0$, then the firm must increase its labour force, and as a result output will also rise. This result is very different from the model c.f., which may be expected to maintain a constant output when $P_K$ rises.

Similarly, an increase in the output price $P_X$ will increase the right hand side of (1.12). Consequently the L.M.F. must reduce labour, and therefore output, in order to return to equilibrium. This is the much discussed "perverse" behaviour of the L.M.F. Thus, neoclassical analysis predicts that the L.M.F. would have a backward sloping supply curve in the short-run.

## 4. Explaining away the Short-Run Perversity of the L.M.F.

The prediction of a backward sloping supply curve for the L.M.F. was apparently too much even for neoclassical supporters to swallow. Consequently a great deal of effort has been expended on explaining why it might not occur.

Domar[11] extended the model to include inputs, other than labour, which would be variable in the short-run. He showed that the addition of other variable inputs would produce a positive supply curve unless labour was a very substantial component of variable costs. Even so, labour would still be cut back in response to a rise in output price (or a fall in the cost of capital). Output would be increased by substituting other variable inputs for labour.

If the L.M.F. produces more than one output, then labour may be increased with an increase in the price of one output, although this is not certain. However, production of the output in question should definitely increase in response to a rise in its price.

Domar[12] used another ploy to escape the "perverse" short-run behaviour of the L.M.F., this was the supply schedule of labour. In this version he took the membership as fixed, but the hours and intensity of work as variable. As long as the supply of labour schedule is positive, then the hours or effort of labour will increase with the price of output, and the supply schedule will be positive.

Domar's scheme may be seen as one form of the utility-maximizing models of the L.M.F. These models assume that L.M.F. members maximise a utility function containing not only their income but other variables.[13] Domar's labour supply schedule is equivalent to a cooperative with fixed membership maximizing a utility function containing income and hours worked. This is exactly the model described by Berman and Berman[14], who claim, like Domar, that the perverse behaviour of the L.M.F. in the short-run will disappear under these conditions.

Ireland and Law[15] have pointed out that this conclusion is incorrect, and that the direction of change in labour hours (and therefore in output) depends on how far the income effect of a rise in earning per hour outweighs the substitution effect between income and hours. In effect, cooperative members may have a backward sloping supply curve of labour. Even with fixed membership, therefore, a rise in the price of output may induce a fall in the hours worked.

Once a flexible membership is reintroduced into the utility function model the direction of change in output becomes even more confused. It does, however, remain certain that membership would be reduced in response to a rise in output price,[16] although total hours worked may increase.

It is clear that a number of writers have tended to assume that the "short-run" for the L.M.F. is rather different from the C.F., in that labour as well as capital will be fixed. Why should this be so? Many authors rely on the intuitive argument that cooperative members will be motivated to support each other, and therefore loathe to throw their colleagues out of work.

Vanek[17] employed this logic to overcome the predictions of L.M.F. perversity. He introduced the "social short-run" in which both labour and capital are fixed. He justified this by arguing that, "in a system where labour is not only the principal beneficiary but also the sole manager of the productive efforts of the enterprise, it makes a good deal of sense to speak and think in terms of categories involving a constant labour force."

Recently Steinherr and Thisse[18] have published a more rigorous justification for a fixed labour force in the short-run. They modified the objective function of the L.M.F. to take account of the risk to workers of being made redundant, and assumed that those members who are to be layed-off are determined by a random process. They used two methods to introduce the risk of redundancy into the model. Either members are assumed to maximize their "expected" utility, which is a function of their earnings while in employment and their earnings when layed-off, weighted respectively by the probability of retention or redundancy. Alternatively workers who remain with the firm are assumed to be obliged to fully compensate those who leave for their loss of income. Either way, the authors illustrate that the L.M.F. would never decide to lay-off workers. In the long run, however, labour may be reduced through attrition.

A number of authors have dismissed predictions of L.M.F. perversity by dropping conditions (a) or (d) of the pure L.M.F. as described on page 1.

Domar[19] discards condition (a), and assumes that cooperatives hire non-members at a fixed wage rate. This is frequently practised among western cooperatives. Basically the cooperative is now equivalent to a capitalist firm which is owned by a fixed number of its workers. It is not surprising, then, that Domar finds that such an arrangement would lead cooperatives to behave just like a C.F. in the short-run.

Meade[20] and Carson[21] resolve the problem by removing characteristic (d) of the L.M.F., i.e., that all members are paid equally. Meade builds a model in which new members are given a smaller share in the coop than existing members. Carson argues that cooperatives

often justify such "inegalitarian" arrangements by reasoning that they are rewarding length of service or different skills. The end result is little different from cooperatives which hire workers. Under both systems new workers may be recruited at the prevailing wage rate which, if the C.F. twin is earning a profit, would be below the rate earned by existing members. A rise in the product price could therefore stimulate old members to recruit new workers as this would improve their own income. The cooperative would consequently display a positive supply curve.

Next we come to Horvat[22], a Yugoslav economist, who hastened to dispute predictions that the L.M.F., and by implication Yugoslav firms, would behave at all strangely. He pointed out that in Yugoslavia firms always fix wages at the beginning of the period. The same is true for most western cooperatives. Horvat argued that once wages are fixed then firms would maximize profits over and above all costs, including wages. The end result would be a firm that behaved just like the traditional capitalist firm.

Although Horvat may be right in arguing that wages are fixed at the beginning of a production period, the behaviour of the L.M.F. will depend on how wages are determined for each period. It seems reasonable to expect that wages will be adjusted in relation to the size of the profit in the previous period.

Vanek and Miovic[23] responded to Horvat's paper by tracing the path of a firm following Horvat's profit maximizing rule. They introduced various formulas for adjusting the wage rate. The simplest model is when wages are adjusted upwards if profits were positive in the previous period, and vice versa if they were negative. Equilibrium

will be finally reached when the wage rate does not change, which can only occur when profits are zero. Obviously, then, the final equilibrium must be exactly the same as in the income maximizing model, on the locus of maximum physical efficiency, where payments to factors exhaust the product.

Applying the Vanek and Miovic wage adjustment rule, we can see that a rise in product price may eventually result in a fall in labour and output. The question is now empirical. Which adjusts more quickly, wages or capital? If wages adjust more slowly than capital, then the concept of a "short-run" adjustment among L.M.F.'s disappears. It seems likely that both labour and capital will be adjusted together. This point is made by Estrin[24], who overcomes the problem of perverse behaviour among L.M.F.'s by arguing that the "short-run" is not a relevant concept to labour-management.

Finally, it should be noted, that the existence of imperfect competition may produce a forward sloping supply curve among L.M.F.'s. Once the assumption of perfect competition and a given product price is dropped, then the direction of response in the short-run becomes indeterminate. Meade[25] reached the following conclusions:-

(a) that an elasticity preserving increase in demand would reduce the output of an L.M.F. working with only two inputs.

(b) If the elasticity of demand rose sufficiently as a result of a rise in demand, then the L.M.F., even with only two inputs, may increase its output.

(c) As under perfect competition, a reduction in a lump sum tax or the price of fixed capital will reduce the optimal level of output.

## 5. The Long-Run

The long-run response of the L.M.F. to changes in exogenous variables has been thoroughly analysed by Vanek.[26] In general the direction of response of the firm is impossible to predict when the price of output changes. As in the short-run, a change in fixed costs, such as a lump-sum tax, will result in output moving in the opposite direction from the C.F.

Although the absolute direction of the L.M.F. response in the long-run cannot be determined within a neoclassical framework, it is possible to determine the direction of relative differences in the response of C.F.'s and L.M.F.'s in the long-run. This will be examined in Chapter 2.

The long-run behaviour of the L.M.F. has not attracted a lot of attention in the literature for two reasons. Firstly, because the direction of change is indeterminate, and, second because, unlike in the short-run, perverse behaviour did not appear inevitable. The issue central to long-run analysis of the L.M.F. has instead been that of efficiency.

## 6. Efficiency in the Labour-Managed Economy

A perennial concern of neoclassical economists writing about labour management is the fact that, even in the long-run when all inputs may be fully adjusted, the marginal product of labour will not be equalised across firms. Domar writes that under the pure income-maximising model "there is a definite misallocation of labour."[27] While Meade also noted that the long-run equilibrium of the L.M.E. is "a Pareto non-optimal situation".[28] The L.M.E. is therefore inefficient because resources could be rearranged to make everyone better-off.

Why is the marginal product of labour not equalised throughout the economy? This occurs because Y, members' income, is determined within the L.M.F. This will be explained in more detail in Chapter 2. In the neoclassical model of the capitalist system wage rates are determined outside of the firm by the labour market. Consequently wages are assumed to be made equal as a result of the clearing of the labour market.

Not only is the long-run position of the L.M.E. thought to be inefficient, but it will also have adverse effects on equality, employment and growth.

The problem of inequalities is quite straightforward. If the labour-market does not clear, then the members in some coops will be better off than those in others.

A corollary of this problem is the prediction that L.M.F.'s will opt for a higher rate of capital intensity than the C.F. As demand expands and the price of the L.M.F. output rises, then members' income will increase. This will raise the implicit cost of labour relative to other inputs, and the L.M.F. will tend to substitute away from labour into capital. This process is explained in more detail in Chapter 2.

The choice of a more capital intensive technique will result in the L.M.F. recruiting less labour than its capitalist twin and also expanding output less. The net result has been predictions of unemployment and slow growth rates in L.M.E.'s.[29]

These predictions for the long-run L.M.E. assume, of course, that the L.M.E. has not reached the point of General Equilibrium. We saw in

section 2, that in General Equilibrium the output and employment of each L.M.F. will be exactly the same as its C.F. twin. For this reason Meade has emphasised the importance of free entry of new firms into the L.M.E. Entry of new firms into an industry in which earnings are above the average should force members' incomes down to a more acceptable rate. Meade writes that, "it is thus clear that the competitive pressures of free entry play a much more important role in a cooperative than they do in an Entrepreneurial system."[30]

## 7. Under-Investment in the Labour Managed Firm

We have so far assumed that the pure L.M.F. hires capital equipment at the rate of $P_K$ per unit of capital per production period. This allowed us to reach the standard conclusion that, in equilibrium, the L.M.F. will employ capital up to the point where the value of its marginal product equals its cost, i.e. $P_X F_X = P_K$ (see equation 1.7).

In reality both capitalist firms and cooperatives generally purchase, rather than hire, the majority of their capital equipment. Usually the return from these fixed assets will continue for several years. Enterprises must, therefore, forego income today in order to finance production in the future. Two issues arise from this.

If members of the L.M.F. had not financed a new investment they could have deposited the unspent money in a savings account and earned the rate of interest, i. Alternatively, they could borrow funds to finance the investment, and pay interest at rate i on the loan. The cost of an investment in K units of capital, at price $P_F$ per unit, which operates for N years may be written as $P_F K (1 + i)^N$. The present value of the cost is therefore $P_F K (1 + i)^N/(1 + i)^N = P_F K$.

Suppose that the investment (for ease of illustration) is equally productive for each of the N years. Each year the production function $X = F(K,L)$ applies. At the end of the first year output of value $P_X X$ will be received. The present value of this output is $\frac{P_X X}{(1 + i)}$ After the next year another $P_X X$ will be received. The present value of this will be $\frac{P_X X}{(1+i)^2}$ and so on for N years.

The problem faced by the L.M.F. is to maximize the present value of their income, i.e.

$$\text{Max } Y = \frac{P_x X\left\{\frac{1}{(1+i)} + \frac{1}{(1+i)^2} \cdots \frac{1}{(1+i)^N}\right\} - P_F K}{L} \qquad (1.13)$$

Differentiating we find that

$$\frac{\delta Y}{\delta X} = \frac{P_X F_K\left\{\frac{1}{(1+i)} + \frac{1}{(1+i)^2} \cdots \frac{1}{(1+i)^N}\right\} - P_F}{L} = 0 \qquad (1.14)$$

Thus, in equilibrium, the L.M.F. will invest up to the point where,

$$F_K\left\{\frac{1}{(1+i)} + \cdots + \frac{1}{(1+i)^N}\right\} = \frac{P_F}{P_X} \qquad (1.15)$$

The left-hand side of (1.15) will decrease as i is increased. Thus, as the rate of interest increases, so the equilibrium marginal product of capital, $F_K$, must increase to return the firm to equilibrium. This is the standard result that a firm will decrease its level of investment as the rate of interest rises.

So far the result is no different from that of the standard neoclassical C.F. The conditions for the L.M.F. diverge when we take account of cooperative rules on ownership of assets.

Many members may expect to leave or retire from the firm before N years are up. Consequently they will leave before receiving the full return on their investment. Exactly the same is true of shareholders in capitalist firms who may well sell their shares before the N years are completed.

In theory capitalist shareholders may recoup the unearned income from their investment via the appreciated value of their shares. A similar scheme is available to some cooperative members. In Mondragon, for example, members may withdraw their share of the assets on leaving the coop. Under British law, however, cooperative shares may only be sold at their nominal value and assets may not be withdrawn by departing members. This may give rise to what Vanek terms "the under-investment force."[31]

If the members have a time horizon H, which is less than the time taken for a full return on investment, N, then the L.M.F. maximand becomes,

$$\text{Max } Y = \frac{P_X X\left\{\frac{1}{(1+i)} + \frac{1}{(1+i)^2} + \cdots + \frac{1}{(1+i)^H}\right\} - P_F K}{L} \qquad (1.16)$$

or

$$F_K\left\{\frac{1}{(1+i)} + \frac{1}{(1+i)^2} + \cdots + \frac{1}{(1+i)^H}\right\} = \frac{P_F}{P_X} \qquad (1.17)$$

The term containing i in (1.17) will be less than in (1.15) as long as $H < N$ (See Appendix 1 for a proof of this). Therefore, if the members' time horizon is less than the investment period, L.M.F. members will set the value of the marginal product of capital above the rate chosen by capitalist firms. The L.M.F. will, therefore, choose to invest less than its capitalist twin.

In Yugoslavia, firms do not legally own their fixed assets, but merely have the right to use them. In practice they must pay for new investment by taking loans or through internal financing just like capitalist firms. There are two differences. When workers leave a Yugoslav firm they cannot take or sell a share of the assets, as they have no rights to them. Second, Yugoslav law requires members to maintain

the book value of the capital assets of the firm. In other words, once they increase the written down value of fixed assets, they must maintain the assets at that level in perpetuity. The only way that they can avoid this is by transferring the assets to another firm. In effect, the Yugoslav firm must pay a depreciation "tax" at the rate $\Delta$ on any net investment.[32]

In a number of articles, Furubotn and Rejovich[33] have illustrated why, even without limited time horizons, Yugoslav property laws may induce under-investment. The Yugoslav firm will aim to maximize:

$$Y = \frac{P_X X\left\{\frac{1}{(1+i)} + \frac{1}{(1+i)^2} + \ldots\left(\frac{1}{1+i}\right)^N\right\} - P_F K - N\delta}{L} \qquad (1.18)$$

where $\delta$ is the present value of the annual rate of depreciation which must be set aside in order to maintain the value of the assets, K. The conditions for a maximum will be,

$$F_K\left\{\frac{1}{(1+i)} + \ldots + \left(\frac{1}{1+i}\right)^N\right\} = \frac{P_F}{P_X}\left(1 + \delta N\right) \qquad (1.19)$$

Once again the L.M.F. will choose to fix the marginal product of capital above the capitalist rate described in (1.15). Capitalist shareholders working under Yugoslav property laws should see the payment of $\Delta$ reflected in a permanent appreciation of the value of their shares. They need not, therefore, include $\delta$ as a cost in their maximand.

## 8. Conclusion

This completes the brief survey of neoclassical literature on labour-management. This is by no means an exhaustive survey. It does, however, cover all the major topics, especially those which make clear-cut predictions about the behaviour of the L.M.F. and the L.M.E.

FOOTNOTES TO CH. 1

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# CHAPTER 2

## AN ENDOGENOUS WAGE RATE IN THE NEOCLASSICAL MODEL

We saw in Chapter 1 that the neoclassical model predicts that the labour managed firm will behave very differently from its capitalist twin. The explanation generally offered for this difference is that the L.M.F. pursues income rather than profit maximization.

The purpose of this chapter is to show that the difference predicted between these two enterprises is simply the result of the questionable neoclassical assumption that wages in a C.F. are entirely determined without the firm, i.e. in the labour market. This is true even when we extend the analysis to include utility maximization by the L.M.F.

If we remove this assumption, and assume that pressures from the labour force, society, or government, forces firms to relinquish part of a potential increase in profits as wages, then predicted differences in the behaviour of the L.M.F. and C.F. will disappear.

The implications of comparing the behaviour of the L.M.F. with a C.F. facing an endogenous wage rate has often been recognised in the literature. Ireland and Law comment that "we must recognise that even in capitalist economies the earnings of workers of similar quality may differ greatly which suggests that the neoclassical model of PM-firms (Profit Maximizing) hiring homogenous labour at a given wage is a significant over-simplification. ... Thus the differences between PM and LM-economies may be differences in degree rather than kind."[1] Estrin also accepted that "if

trade unions (under capitalism) can absorb some proportion of profits into wages, there will be interfirm wage dispersion so the systems (CE & LME) differ quantitatively rather than qualitatively."[2]

1. Short-Run Behaviour of the L.M.F.

We will now look at the short-run comparative statics of the L.M.F. in more detail. The style of much of this section follows the analysis used by Domar.[3]

The pure income maximizing L.M.F. faces the following problem:-

$$\text{Max } Y = \frac{P_X X - P_M M - P_K K}{L} \tag{2.1}$$

subject to the production function

$$X = F(K,M,L) \tag{2.2}$$

The first order conditions for a maximum in the short-run when K is fixed are:-

$$F_M = P_M/P_X \tag{2.3}$$

$$F_L = \frac{P_X X - P_M M - P_K K}{P_X L} = \frac{Y}{P_X} \tag{2.4}$$

For the C.F. the equivalent first order conditions are:

$$F_M = P_M/P_X \tag{2.5}$$

$$F_L = W/P_X \tag{2.6}$$

To find the effect of a change in the output price, $P_X$, equations (2.3) and (2.4) or (2.5) and (2.6) must be differentiated with respect to $P_X$. The result is:

$$F_{MM}\frac{\delta M}{\delta P_X} + F_{ML}\frac{\delta L}{\delta P_X} = \frac{-P_M}{P_X^2} = \frac{-F_M}{P_X} \qquad (2.7)$$

for both types of enterprise

$$F_{LM}\frac{\delta M}{\delta P_X} + F_{LL}\frac{\delta L}{\delta P_X} = \frac{-W}{P_X^2} = \frac{-F_L}{P_X} \qquad (2.8)$$

for the C.F.

$$F_{LM}\frac{\delta M}{\delta P_X} + F_{LL}\frac{\delta L}{\delta P_X} = \frac{P_M M}{P_X^2 L} + \frac{P_K K}{P_X^2 L} = \frac{F_M M}{P_X L} + \frac{F_K K}{P_X L} \qquad (2.9)$$

for the L.M.F.

Using the subscripts S and C to denote the labour managed and capitalist firms respectively, we may solve equations (2.7), (2.8) and (2.9) to find the change in L as the result of the change in $P_X$.

$$\frac{\delta L}{\delta P_X}C = \frac{-F_L F_{MM} + F_M F_{LM}}{P_X\,(F_{LL}F_{MM} - F_{LM}F_{ML})} > 0 \qquad (2.10)$$

We know (2.10) to be positive, given the neoclassical assumption of a concave production function.

For the L.M.F. we have:-

$$\frac{\delta L}{\delta P_X}S = \frac{\left(\frac{F_M M}{L} + \frac{F_K K}{L}\right) F_{MM} + F_M F_{LM}}{P_X(F_{LL}F_{MM} - F_{LM}F_{ML})} < 0 \qquad (2.11)$$

The difference in the response of the two types of enterprise may be written as:

$$\frac{\delta L}{\delta P_X}S - \frac{\delta L}{\delta P_X}C = \frac{\left(\frac{F_M M + F_K K}{L} + F_L\right) F_{MM}}{P_X(F_{LL}F_{MM} - F_{LM}F_{ML})} < 0 \qquad (2.12)$$

In other words,

$$\frac{\delta L}{\delta P_X} S < \frac{\delta L}{\delta P_X} C$$

that is, that the L.M.F. increases L (in fact decreases L) less in response to an increase in output price than does the C.F.

The meaning of the term in (2.12) may be better understood by looking at the effects on the C.F. of a change in the wage rate, W, when all other prices remain constant. The analysis below is adapted from Neary (1979)[4] who illustrated the "income effect" of L.M.F. behaviour in the short-run. In this chapter his analysis is extended to long-run behaviour and utility maximization by the L.M.F. Differentiating (2.5) and (2.6) with respect to W, we find

$$F_{ML} \frac{\delta L}{\delta W} + F_{MM} \frac{\delta M}{\delta W} = 0 \qquad (2.13)$$

and $$F_{LL} \frac{\delta L}{\delta W} + F_{LM} \frac{\delta M}{\delta W} = \frac{1}{P_X} \qquad (2.14)$$

which may be written as

$$\frac{\delta L}{\delta W} C = \frac{F_{MM}}{P_X(F_{LL}F_{MM} - F_{LM}F_{ML})} \qquad (2.15)$$

Inserting (2.15) into (2.12) we find that

$$\frac{\delta L}{\delta P_X} S - \frac{\delta L}{\delta P_X} C = \left(\frac{F_M M + F_K K}{L} + F_L\right) \frac{\delta L}{\delta W} C \qquad (2.16)$$

Equation (2.16) highlights why the income maximizing L.M.F. may behave differently from the C.F. in the short-run. As the output price, $P_X$, increases, the L.M.F. is able to increase the net income of its members, and so the implicit price of labour faced by the L.M.F. will rise in comparison with the fixed wage faced by the C.F. In consequence the L.M.F. will substitute away from labour, as reflected in the term $\delta L / \delta W_C$.

the L.M.F. will have to sacrifice part of the potential increase in Y that it could achieve. On the other hand, even when holding L constant, it will be able to enjoy some increase in Y when $P_X$ increases.

The L.M.F. labour-income possibility curve must pass through Ec, the C.F's optimum scale and factor proportions. This is evident from equation (2.21). When the function $g(\delta Y \mid \bar{P}_X) = 0$, then $\delta K_S = \delta K_C$ and $\delta L_S = \delta L_C$, i.e. the (K/L) ratio of the L.M.F. must equal that of the C.F. We have already seen that the rational L.M.F. will always choose factor proportions such that $F_K = P_K/P_X$, and Ec must lie at such a point. However, the L.M.F. will actually be paying a wage $Y > Wo$ at Ec, and so its Isocost curve must be steeper than that of the C.F.

It is possible to graph the (K/L) ratio as a function of Y, in comparison with the pure profit-maximizing (K/L) ratio of the C.F. As is shown in Appendix 2, when output price (therefore profits) increase, then

$$\left(\frac{K}{L}\right)_S \gtreqless \left(\frac{K}{L}\right)_C \quad \text{as} \quad g\left(\delta Y \,\middle|\, \bar{P}_X\right) \gtreqless 0 \tag{2.34}$$

as long as the production function is such that the C.F. would increase its (K/L) ratio if W increased when all other prices remained constant.

When will $g(\delta Y \mid \bar{P}_X) = 0$? This occurs when the C.F. and L.M.F. increase K & L in equal amounts and so must be producing the same output, shown as $X_2$ in diagram 2.1. At this point two equalities must hold

for the C.F. : $$P_1X_2 = S + WoL_2 + P_KK_2 \tag{2.35}$$

for the L.M.F. : $$P_1X_2 = Y_2L_2 + P_KK_2 \tag{2.36}$$

i.e. $Y_2L_2 = S + W_oL_2$

and $$\delta Y = Y_2 - W_o = \frac{S}{L_2} \tag{2.37}$$

Differentiating by $P_X$ we find

$$\begin{bmatrix} F_{KK} & F_{KM} & F_{KL} \\ F_{MK} & F_{MM} & F_{ML} \\ F_{LK} & F_{LM} & F_{LL} \end{bmatrix} \begin{bmatrix} \frac{\delta K}{\delta P_X} \\ \frac{\delta M}{\delta P_X} \\ \frac{\delta L}{\delta P_X} \end{bmatrix} = \begin{bmatrix} -\frac{F_K}{P_X} \\ -\frac{F_M}{P_X} \\ -\frac{F_L}{P_X} \end{bmatrix} \text{ OR } = \begin{bmatrix} -\frac{F_K}{P_X} \\ -\frac{F_M}{P_X} \\ \frac{F_K K}{P_X L} + \frac{F_M M}{P_X L} \end{bmatrix} \qquad (2.17)$$

for the C.F for the L.M.F.

Writing the matrix on the left-hand side of (2.17) as A, and the minor element of $A_{ij}$ as $a_{ij}$, then the long run difference in the response of the two enterprises may be written as:

$$\frac{\delta L}{\delta P_X} S - \frac{\delta L}{\delta P_X} C = \left(\frac{F_K K}{L} + \frac{F_M M}{L} + F_L\right) \frac{a_{LL}}{|A| P_X} < 0 \qquad (2.18)$$

Totally differentiating the first order conditions of the C.F. with respect to the wage rate W, we find

$$A \times \begin{bmatrix} \frac{\delta K}{\delta W} C \\ \frac{\delta M}{\delta W} C \\ \frac{\delta L}{\delta W} C \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \\ \frac{1}{P_X} \end{bmatrix}$$

and so $$\frac{\delta L}{\delta W} C = \frac{a_{LL}}{|A| P_X} \qquad (2.19)$$

and substituting(2.19) into (2.18)

$$\frac{\delta L}{\delta P_X} S - \frac{\delta L}{\delta P_X} C = \left(\frac{F_K K}{L} + \frac{F_M M}{L} + F_L\right) \frac{\delta L}{\delta W} C < 0 \qquad (2.20)$$

The difference between the long-run response of the L.M.F. and C.F. is again entirely due to the assumption that the L.M.F. adjusts members' income upwards to absorb the entire revenue, and that the

wage rate in the C.F. does not change.

This style of analysis may be easily extended to change in M and K as well as L, and also to changes in $P_M$ and $P_K$. The conclusion is always the same. Any predicted differences in behaviour between the two types of enterprises is entirely due to the assumption that as conditions change, then wages and L.M.F. members' incomes will diverge.

3. Income Adjustment within the L.M.F.

Suppose, then, that L.M.F. members' earnings do not immediately fully adjust to absorb all revenue, and that the L.M.F. adjusts inputs to the prevailing earnings. The L.M.F. will now operate at some lower Y and larger L. We could now re-write (2.20) as

$$\frac{\delta L}{\delta P_X}S = \frac{\delta L}{\delta P_X}C + g\left(\delta Y\Big|_{\overline{P}_X}\right)\frac{\delta L}{\delta W}C \qquad (2.21)$$

where g is some function of the increase in members' income measured at the original price of $P_{XO}$. Y must be deflated because $\frac{\delta L}{\delta W}C$ describes the change in L as a result of a change in W when all other prices are fixed.

It may be seen from (2.21) that if the L.M,F. did not adjust Y up at all, i.e. $Y = W$ and $\delta Y = 0$, then the L.M.F. may employ more labour than the C.F. as $P_X$ increases. This is because if $\delta Y = 0$, then $\delta Y\Big|_{\overline{P}_X}$ (the real, deflated value of $\delta Y$) is less than zero.

Consequently the function g will be negative. As $\delta L/\delta WC$ is negative, then $\frac{\delta L}{\delta P_X} S$ must be greater than $\frac{\delta L}{\delta P_X} C$.

This style of analysis may be equally applied to a utility maximizing L.M.F. in which both income and size of membership are important in determining members' utility. Thus, we may see the L.M.F. as an income maximizer, but with a slow wage adjustment, or as a utility maximizer choosing to restrain increases in income in order to reduce lay-offs or even to create employment. The following analysis may be used to describe either position.

This discussion may be illustrated using the usual isoproduct and isocost curves. However, to understand why the C.F. and L.M.F. differ, it is first necessary to distinguish the points at which their isocost lines will intercept the L and K axis.[5]

Isocost lines cut an axis at the point at which costs for a given output are spent entirely on that one factor. Suppose that the C.F. is producing output X at a price $P_X$ and total cost of C. Then the equation for the capitalist isocost line may be written as

$$C = WL + P_K K \qquad (2.22)$$

(dropping M to allow the situation to be depicted in a two dimensional diagram).

However, if the capitalist firm is able to enjoy a surplus equal to S at this output and price, then

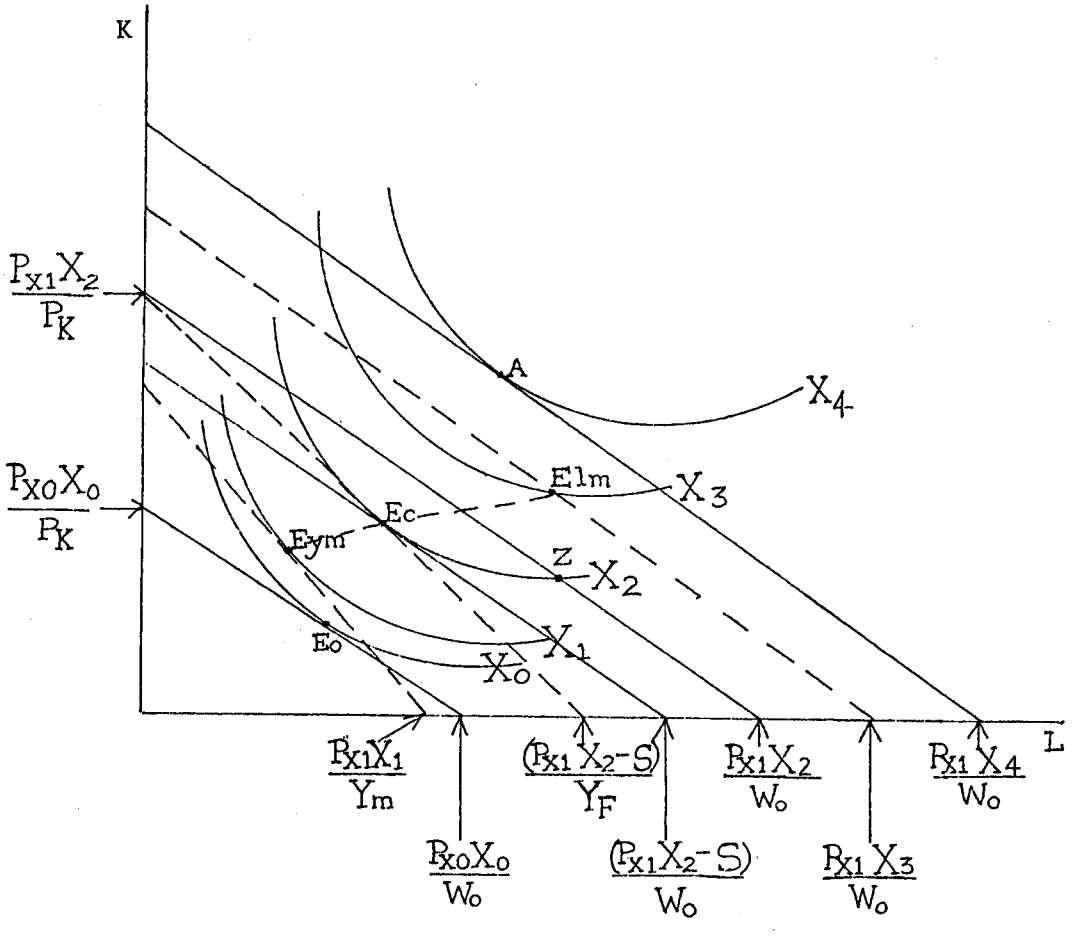
$$C = P_X X - S \qquad (2.23)$$

i.e. the equation for the capitalist isocost line is

$$P_X X - S = WL + P_K K \qquad (2.24)$$

and so the intercept with the L axis, when K = 0, is given by $(P_X X-S)/W$, and similarly the intercept with the K axis is $(P_X X-S)/P_K$. For the L.M.F., however, which does not aim to earn a surplus that will not be returned to the original inputs (including labour), then the intercepts for the output X will be at $P_X X/Y$ and $P_X X/P_K$.

Diagram 2.1




In diagram (2.1) $X_0$ to $X_4$ are isoproduct curves, with output increasing as the curves move away from the origin, but with returns to scale monotonically decreasing with output from some value above one to a value below this.

Originally both the L.M.F. and C.F. produce $X_0$ using factor proportions represented by $E_0$. At this price ($P_{X0}$) and output $X_0$, the C.F. is unable to earn a surplus, and so the isocost line for both enterprises cuts the L axis at $(P_{X0}X_0)/W_0$.

The price now rises to $P_1$, and the C.F. adjusts its output to $X_2$, the output at which it will maximise its surplus, S. At this output it chooses the factor proportions represented by Ec. In the diagram I have drawn a homogeneous production function in which C.F. factor proportions stay (more or less) the same after a price change. Of course, this is not essential, and, depending on the shape of the isoproduct curves, factor proportions may be adjusted.

The L.M.F. could follow the example of the C.F. and move to Ec, while holding the wage rate at W. If it did so, it would find itself with a surplus, S, at the end of the year, which it could then distribute to the members. Alternatively the L.M.F. could take advantage of the fact that it is only required to cover costs, and might adjust factor proportions to the position indicated by Z in the diagram. At this point the wage rate remains at Wo, but the labour force has been increased beyond the C.F. value, to a point at which L.M.F. revenues just cover costs.

However, Z is clearly not an optimal position for the L.M.F., and there is no reason why it should remain at the profit-maximising output of $X_2$. At Z the marginal revenue product of capital ($F_K$) is considerably more than $P_K/P_{X1}$ (since $F_K = P_K/P_{X1}$ at Ec.).The L.M.F. might increase K (and consequently X), and once more receive a surplus, which may be distributed as a bonus or alternatively used up in employing yet more labour.

The L.M.F. objective then, might be seen as one of maximising L for any given $Y \geqslant Wo$ which it pays itself, with the constraint $Y \leqslant Ym$, the maximum Y which may be earned without the L.M.F. finding itself unable to cover costs. The problem then becomes one of,

$$\text{Maximise} \quad L = \frac{P_X X - P_K K}{Y} \tag{2.25}$$

$$\text{subject to } X = F(L,K) \tag{2.26}$$

Forming the Lagrangian

$$Z = \frac{P_X X - P_K K}{Y} + \lambda(X - F(L,K)) \tag{2.27}$$

and for a maximum

$$\frac{\delta Z}{\delta X} = \frac{P_X}{Y} + \lambda = 0 \tag{2.28}$$

$$\frac{\delta Z}{\delta K} = \frac{-P_K}{Y} - \lambda F_K = 0 \tag{2.29}$$

and combining (2.28) and (2.29), then the first order condition for a maximum is

$$F_K = \frac{P_K}{P_X} \tag{2.30}$$

and substituting back into (2.25)

$$L = \frac{P_X X - P_X F_K K}{Y} \tag{2.31}$$

$$\text{or} \quad \frac{X - F_K K}{L} = \frac{Y}{P_X} \tag{2.32}$$

Equation (2.30) is the usual condition that capital should be employed up to the point at which the value of its marginal product is equal to its price. However, (2.32), the rule for adjusting L, is quite different from the rule for the profit maximising C.F. or the income maximizing L.M.F. L is simply increased until all revenue above the cost of capital is absorbed in paying the members at the chosen level of income Y.

Returning to Diagram 2.1, $X_4$ represents the output at which the capitalist firm would earn zero profits when the product price is set at $P_{X1}$, i.e. the output at which average costs equal average revenue. If the C.F. was forced to produce at this output then it would choose to combine K and L in the proportions indicated by A. Clearly the L.M.F. cannot possibly move beyond output $X_4$ without running at a loss or lowering members' income below the capitalist wage rate. However, the L.M.F. which is satisfied to keep wages at $W_0$ could maximise L by moving to Elm at which $F_K = \frac{P_K}{P_X}$ but $Y/P_X = \left(\frac{X-F_K K}{L}\right)$. In other words, the L.M.F. maximizing L will adjust capital until the value of its marginal product equals its rental, but will increase labour beyond the usual C.F. level (at which $Y/P_X = F_L$), until any further increase in labour at the chosen income level must force the firm into making a loss.

When the product is such that the C.F. is making zero profits, then it is well known that at the output chosen by the C.F. ($X_0$), then

$$X_0 = F_L L_0 + F_K K_0$$

i.e.
$$F_L = \frac{X_0 - F_K K_0}{L_0} \qquad (2.33)$$

and so condition (2.32) reduces to the usual condition that $F_L = W/P_X$, and the L.M.F., even when trying to maximise labour, must produce at the same scale and factor proportions as the C.F.

At the other extreme, the L.M.F. may choose to maximise Y regardless of the size of the labour force (the original Ward hypothesis), while income Y adjusts instantaneously to absorb all the surplus. In this case the firm's objective may be translated, in terms of the diagram, as one of trying to maximise the slope of the isocost curves. The intercept of the isocost line with the L axis will be $P_X X/Y$ and so, as Y is increased, the distance of the intercept from the origin must decrease, but the intercept with the K axis $P_X X/P_K$ will remain the same. In consequence, as Y increases the slope of the isocost line must increase.

There is, however, a limit to how far the L.M.F. may tilt the isocost lines, the same constraint that limits the maximisation of L, i.e. that revenues must cover costs. This, as is well known for the case of an L.M.F. maximising Y, is reflected in the condition that the L.M.F. must produce at a point of local constant returns to scale.

Returning to the diagram, the L.M.F. may produce $X_3$ at a wage rate of Wo in order to maximise L. Since it is paying Wo to its members then its isocost line must be parallel to that of the C.F. Now the L.M.F. decides to increase Y by sacrificing the jobs of some members. Any increase in Y will move the isocost line's intercept with the L axis toward the origin, and output must be reduced. However, a reduction in output will also move the intercept with the K axis ( $= P_X X/P_K$) towards the origin, but because of the effect of $\delta Y$, the L intercept moves farther than the K intercept. The L.M.F. trying to increase Y must, therefore, set in motion a process by which its isocost line moves downwards and becomes steeper. Eventually the maximum possible Y will be achieved at a point such as Eym, where, as we know from equation (2.12) the L.M.F. labour force must be less than the C.F.'s optimum labour force at Ec.

Whether or not Eym is reached at an output above or below the initial Eo depends entirely (as explained by Estrin (1980) )[6] on "how returns to scale vary around an isoquant". We know that at Xo the equilibrium Eo must lie at a point of local constant returns to scale. Because of diminishing returns,A, Ec, and intervening points, must reflect less than unit returns to scale. As I have drawn diagram 1, returns to scale must increase as K is substituted for L around an isoquant, and consequently Eym will be at a point of local C.R.S. If however the reverse was true, i.e. returns to scale diminish as K is substituted for L, then the output at which Y is maximised would be at an output below Xo. For the special case in which returns to scale are constant around an isoquant, then the L.M.F. will remain at output Xo, but it may increase members' income when $P_X$ increases by substituting K for L.

The alternatives available to an L.M.F. as described in equation (2,21) are depicted by the dashed line passing between Eym and Elm in diagram 1. Moving away from Elm, the increasing income of members will be indicated by the increasing slope of the isocost curve as L is decreased. It would be possible to map out a locus of possible income and labour-force combinations.

The members' utility function may include a preference to hold the labour force constant, whenever this is possible without going bankrupt. If Eym lies to the left of Eo then this preference will be included in the Eym → Elm locus. However, it is possible that Eym will lie to the right of Eo, i.e. after a price increase the L.M.F. will need to increase L if it is to maximise Y. In this case the locus of possibilities will have to be extended beyond Eym to the point at which L = Lo. However,

the L.M.F. will have to sacrifice part of the potential increase in Y that it could achieve. On the other hand, even when holding L constant, it will be able to enjoy some increase in Y when $P_X$ increases.

The L.M.F. labour-income possibility curve must pass through Ec, the C.F's optimum scale and factor proportions. This is evident from equation (2.21). When the function $g(\delta Y \mid_{\bar{P}_K}) = 0$, then $\delta K_S = \delta K_C$ and $\delta L_S = \delta L_C$, i.e. the (K/L) ratio of the L.M.F. must equal that of the C.F. We have already seen that the rational L.M.F. will always choose factor proportions such that $F_K = P_K/P_X$, and Ec must lie at such a point. However, the L.M.F. will actually be paying a wage $Y > Wo$ at Ec, and so its Isocost curve must be steeper than that of the C.F.

It is possible to graph the (K/L) ratio as a function of Y, in comparison with the pure profit-maximizing (K/L) ratio of the C.F. As is shown in Appendix 2, when output price (therefore profits) increase, then

$$\left(\frac{K}{L}\right)_S \gtreqless \left(\frac{K}{L}\right)_C \quad \text{as} \quad g\left(\delta Y \mid_{\bar{P}_X}\right) \gtreqless 0 \tag{2.34}$$

as long as the production function is such that the C.F. would increase its (K/L) ratio if W increased when all other prices remained constant.

When will $g(\delta Y \mid_{\bar{P}_X}) = 0$? This occurs when the C.F. and L.M.F. increase K & L in equal amounts and so must be producing the same output, shown as $X_2$ in diagram 1. At this point two equalities must hold

for the C.F. : $$P_1X_2 = S + WoL_2 + P_KK_2 \tag{2.35}$$

for the L.M.F. : $$P_1X_2 = Y_2L_2 + P_KK_2 \tag{2.36}$$

i.e. $Y_2L_2 = S + W_oL_2$

and $$\delta Y = Y_2 - W_o = \frac{S}{L_2} \tag{2.37}$$

To determine S we can compare the C.F.'s initial equilibrium at Eo, with its profit maximizing equilibrium at Ec. At Eo we know that

$$P_{XO}X_O = W_OL_O + P_KK_O \qquad (2.38)$$

and so combining (2.35) and (2.38) we have

$$\delta P_X X_2 + P_{XO}\frac{\delta X}{\delta P_X} = S + W_O\frac{\delta L}{\delta P_X} + P_K\frac{\delta K}{\delta P_X} \qquad (2.39)$$

But at Eo, $P_XF_L = Wo$ and $P_KF_K = P_K$, so

$$\delta P_X X_2 + P_{XO}\frac{\delta X}{\delta P_X} = S + P_{XO}\frac{\delta X}{\delta P_X} \qquad (2.40)$$

$$\therefore \quad S = \delta P_X X_2$$

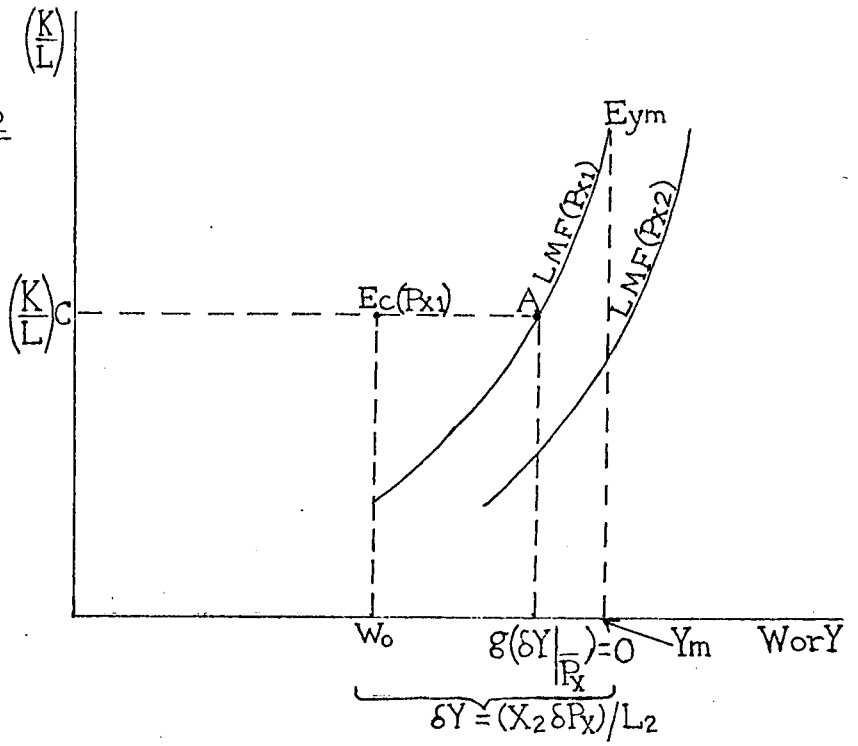
and so

$$\delta Y = \frac{\delta PX_2}{L_2} > 0 \qquad (2.41$$

which means that when product price increases the L.M.F. would be able to increase $\delta Y$ to a value greater than ( $\delta Y\Big|_{\bar{P}_X} = 0$) without reducing the labour force below the size of the capitalist L. This seems reasonable since the rise in product price might be viewed as a decrease in the value of returns going to both inputs, but since the L.M.F. is able to continue paying only $P_K$ per unit of K, then it may increase the return to L so as to more than compensate for the rise in product price.

Diagram 2.2 compares the L.M.F. wage - capital/labour ratio curve with that of the pure profit maximizing capitalist firm. At maximum Y = Ym, the K/L ratio of the L.M.F. must be higher than that of the C.F. which will employ inputs in a ratio of (K/L)C and pays labour a wage of Wo. The income-maximising L.M.F. finds itself in a position such as Eym in Diagram 2.2, when the product price $P_1$ is above the zero profit price

Diagram 2.2




of Po. At the other extreme, if the L.M.F. continues to pay Wo to its members (I am assuming that Wo is the minimum acceptable wage to workers in either enterprise) then it must have a lower capital/labour ratio than the C.F. At some point A in between, at which Y > Wo, the L.M.F. and C.F. will have the same ratio of K to L, i.e. $(K/L)_C$, and, in fact, produce the same output.

As the product price increases then $g(\delta Y|_{\bar{P}_X})$ must decrease, and so it can be seen from (A2.4) in the appendix that, when the function g is positive, then for any given Y, as $P_X$ increases, the difference between $(K/L)_S$ and $(K/L)_C$ must decrease. But when g( ) is negative, then as $P_X$ increases then the absolute value of g( ) must increase, that is it becomes yet more negative. And so, once the L.M.F. (K/L) ratio falls below $(K/L)_C$ then for any given Y the (K/L) ratio at $P_2$ will be even lower than for $P_1$. In other words, the L.M.F. curve moves further to the right of Ec as $\delta P$ increases.

Of course, as the product price changes, Ec may move up or down depending on the form of the production function. In the case of a

homogeneous production function it would stay in the same position. But, however Ec shifts, the distance between Ec and the L.M.F. curve must increase as product price increases. Thus, in diagram 2.2 Ec is assumed to remain stationary as price increases from $P_1$ to $P_2$ but the L.M.F. curve will shift to the right.

Throughout this section I have concentrated on capital/labour ratios, however, it should be clear from the appendix, that exactly the same arguments may be applied to the materials/labour ratio.

If the L.M.F. holds labour constant then its choice of Y and factor proportions may lie somewhere between A and Eym in diagram 2.2. However, fixed L may require the L.M.F. to move to some point off this locus, lying to the left of Eym in diagram 2.1. Whichever is the case, the L.M.F. may still achieve a net income per worker above Wo, and, as shown in the appendix, its capital/labour ratio will be above $(\frac{K}{L})_C$. The fixed labour option will, therefore, lie somewhere in the vicinity of the A $\rightarrow$ Eym locus.

In order to draw conclusions about the differences between the L.M.F. and C.F. ratio it has been necessary to constrain the production function to one in which the C.F. would increase its capital intensity when the wage rate rises. Obviously this excludes a fixed proportions function. If such a function prevailed the L.M.F. may well choose a scale of output which was different from the C.F.'s optimum position. If the L.M.F. wished to maximise income per worker it would choose a scale which maximised average product per worker, which under fixed proportions must lie at the zero profit constant returns to scale output

(i.e. Eo). Alternatively, to maximise L, the L.M.F. would move to the output at which revenue just cover costs, i.e. where average costs (at a wage rate of Wo) equal average revenue. Such a point would be equivalent to A in Diagram 1.1 The L.M.F. may choose any output between these two depending on its degree of preference for L or Y. One choice may be at the same scale as the C.F., but here again, the L.M.F. should be able to achieve an income of $Y > Wo$ for its members.

4. Introducing an Endogenous Wage Rate in the C.F.

So far all the comparison has been based on the mythical C.F. which is able to ruthlessly maximise profits without releasing any of its 'potential surplus' to employees of the firm. The 'potential surplus' is that profit which a C.F. might achieve after a rise in product price if all factors continued to be paid at their old, zero profits price. 'Profits' I define to be the actual surplus expropriated by the C.F.

Law has already pointed out that the short-run behaviour of the pure income maximising L.M.F. is equivalent to "a limiting case of Fellner's union-management model with workers possessing maximal bargaining power,"[7] (i.e. able to retrieve all potential surplus as wages). Furthermore, if L.M.F. members are assumed to include the number of workers, as well as income per worker, in their utility function, then the model of the L.M.F. in the short-run becomes equivalent to the Fellner model.[8] In this section this approach is extended to the long-run analysis of the firm.

Let us continue to assume that the C.F. is a profit maximiser, but that it is forced to relinquish a proportion $(1-\alpha) < 1$ of its potential surplus, S, either because of pressure from organised labour or from societal/government pressures. Representatives of the firm's employees now face the same choice as members of the L.M.F. Suppose that they decide to maximize W regardless of how this may effect employment levels. The objective may be written as

$$\text{Max } W = \frac{P_X X - P_M M - P_K K - \alpha S}{L} \qquad (2.42)$$

subject to the usual production function

$$X = F(L, M, K)$$

When $P_X = Po$ then $S = 0$, and the term $\propto S$ in (2.42) will disappear, allowing the C.F. employees to achieve the same income as L.M.F. members, i.e. Wo.

The first order conditions for a maximum are

$$\frac{\delta W}{\delta K} = \frac{P_X F_K - P_K}{L} = 0 \qquad \text{i.e.} \quad F_K = \frac{P_K}{P_X} \tag{2.43}$$

$$\frac{\delta W}{\delta M} = \frac{P_X F_M - P_M}{L} = 0 \qquad \text{i.e.} \quad F_M = \frac{P_M}{P_X} \tag{2.44}$$

$$\frac{\delta W}{\delta L} = \frac{L(P_X F_L) - WL}{L^2} = 0 \qquad \text{i.e.} \quad F_L = \frac{W}{P_X} \tag{2.45}$$

which are exactly the same as for the L.M.F., except, of course, $Y_m$ must be greater than maximum W.

To find the effect of an increase in $P_X$, (2.43) to (2.45) must be totally differentiated.

$$\begin{bmatrix} F_{KK} & F_{KM} & F_{KL} \\ F_{MK} & F_{MM} & F_{ML} \\ F_{LK} & F_{LM} & F_{LL} \end{bmatrix} \begin{bmatrix} \frac{\delta K}{\delta P_X} \\ \frac{\delta M}{\delta P_X} \\ \frac{\delta L}{\delta P_X} \end{bmatrix} = \begin{bmatrix} -\frac{F_K}{P_X} \\ -\frac{F_M}{P_X} \\ \frac{F_K K}{LP_X} + \frac{F_M M}{LP_X} + \frac{\propto S}{LP_X^2} \end{bmatrix} \tag{2.46}$$

and so

$$\frac{\delta K}{\delta P_X} t = \frac{\delta K}{\delta P_X} c + \left(\frac{F}{L} + \frac{\propto S}{LP_X^2}\right) \frac{\delta K}{\delta W} c \Big|_{\bar{P}_X} \tag{2.47}$$

$$\frac{\delta M}{\delta P_X} t = \frac{\delta M}{\delta P_X} c + \left(\frac{F}{L} + \frac{\propto S}{LP_X^2}\right) \frac{\delta M}{\delta W} c \Big|_{\bar{P}_X} \tag{2.48}$$

$$\frac{\delta L}{\delta P_X} t = \frac{\delta L}{\delta P_X} c + \left(\frac{F}{L} + \frac{\propto S}{LP_X^2}\right) \frac{\delta L}{\delta W} c \Big|_{\bar{P}_X} \tag{2.49}$$

using the subscript t to denote the situation where through trade union pressure or otherwise the C.F. gives up a proportion $(1-\alpha)$ of its potential surplus. Equations (2.49) may be re-written as,

$$\frac{\delta L}{\delta P_X}_t = \frac{\delta L}{\delta P_X}_c + \left\{ g \left( \delta W \Big|_{\overline{P}_X} \right) + \frac{\alpha S}{L P_X 2} \right\} \frac{\delta L}{\delta W}_c \Big|_{\overline{P}_X} \qquad (2.50)$$

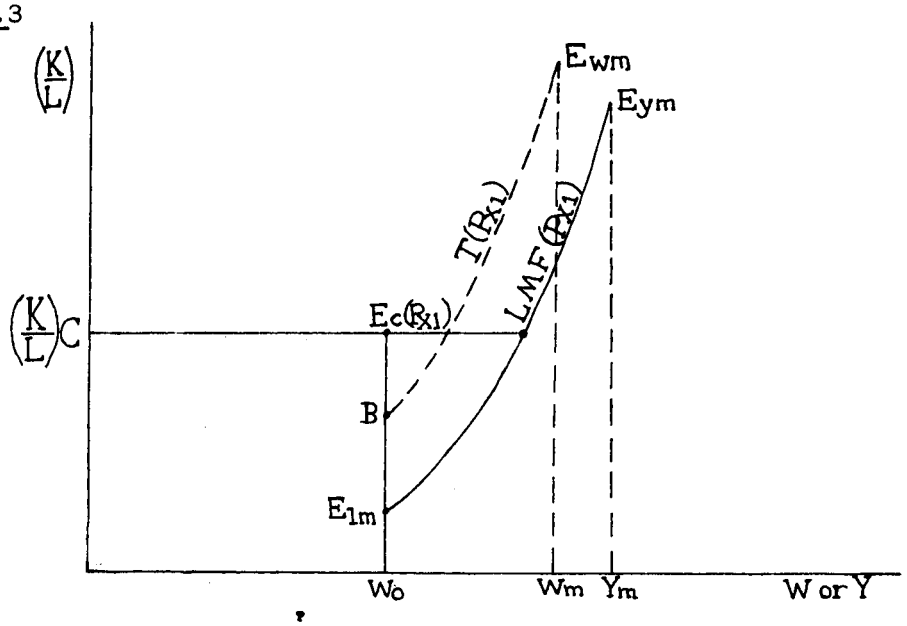
similarly for M and K.

(2.50) may be compared with (2.21). It is clear that for any given increase in workers' income above Wo such that $\delta W = \delta Y$, then C.F. employees will be forced to accept a smaller labour force than the L.M.F. The reverse is true for any given increase in the labour force.

Thus, in diagram 2.1 the C.F. employees may also select a point on the Eym/Elm locus, but at any point on this curve their isocost line would have a lower gradient than the equivalent L.M.F. isocost line. The C.F.'s possible options must also begin above Eym (to a degree depending on the size of $\alpha$) and end below Elm.

In diagram 2.3 the C.F. and L.M.F. options are compared. The C.F. possibility curve, shown as T, must lie to the left of the L.M.F. curve because, as a glance at equation (A4) in the appendix will show, for any given $\delta W$ then Ne $>$ Ns, i.e. the C.F. (K/L) ratio will be greater than the L.M.F. (K/L) ratio. Furthermore, for maximum Y or W, when $g(\delta Y \Big|_{\overline{P}_X})$ in (A4) is replaced by (F/L) for the L.M.F. and $(\frac{F}{L} + \frac{\alpha S}{P_X 2})$ for the C.F., then $(\frac{K}{L})_t > (\frac{K}{L})_C$, as illustrated in diagram 2.3.

Diagram 2.3




However, the maximum of wage rate, Wm, will be less than Ym.

As $\delta P_X$ (and therefore S) increases, then both the T and L.M.F. curves will move to the right in diagram 2.3(in respect of Ec; which may or may not shift). Returning again to (A4), as $\delta P_X$ increases then the $\delta Y$ or $\delta W$ which satisfies the condition that $g\left(\delta Y \,\middle|_{\overline{P}_X}\right) = 0$ must increase, i.e. the L.M.F. or C.F. can achieve a higher income per worker while maintaining the pure profit maximising factor proportions of $(\frac{K}{L})c$.

However, an increase in $\delta P_X$ will also increase S and so the distance between the LMF and T curves must increase as well.

Suppose, then, that an increase in capitalist profits was observed. This may be the result of two forces, either improved trading conditions ($P_X$ increases or factor prices decrease) or a weakening of the C.F. employees' bargaining power so that the C.F. is able to force $\alpha$ up. In both cases it should be clear that the T and LMF curves in Diagram 2.3 must move further apart.

## 5. Variable Hours

So far I have ignored the issue of flexibility in the hours worked by capitalist employees and L.M.F. members. Hours of work has often been included in the L.M.F. utility function, i.e. members maximise a function of the form

$$U = U(Y, L, h) \qquad (2.51)$$

where h is hours worked and $U_h < 0$. Now, depending on the members' preferences, $U_{hy}$ may be positive or negative, Y now being taken as net income per hour.

But whatever the sign of $U_{hy}$, the total labour offered L = mh (where m is the number of members) will still lie along the Eym → Elm curve in diagram 1, because the condition that Fk = $P_K/P_X$ will still prevail.

Previously Y and W were described as income per worker, but since hours were assumed fixed, then they may just as easily have represented earnings per hour. In diagram 1 the L axis may now be taken to represent total hours of labour rather than number of workers. If $U_{hy} > 0$, i.e. the members increase the hours worked as the hourly wage rate increases, then as the L.M.F. moves towards Elm so the proportion of L = hm which is made up of h will increase relative to m. The reverse will be true if $U_{hy} < 0$.

The L.M.F. curve illustrated in diagrams 2.2 & 2.3 will then, take the same form even if flexible hours are taken into account. The important point is that L and Y must be measured in hours and hourly rates.

The capitalist firm may similarly adjust hours as a result of agreements over the length of the working week or through the use of overtime. 'h' may not be adjusted to the same degree, or even in the same direction, as the l.m.f. when profits improve, but the T curve illustrated in diagram 2.3 will still represent the C.F.'s possible options.

6. Hired Labour

The final option is the use of hired labour by the labour-managed firm. When product price increases above Po, the existing members may hire non-members at the capitalist wage rate of Wo. They may choose this path either because their concern for the welfare of non-members is negligible, or because they want the freedom to lay-off workers when necessary.

If the first were true, then the members' objective would be to maximise their own income. Their objective would be exactly the same as the pure profit-maximising C.F., and they would try to move to Ec, and distribute the profit earned between the existing members.

In the second case, members may still derive some pleasure from providing employment for non-members, and may choose to sacrifice part of the potential increase in their own income in order to provide employment or increase the wage of hired workers. In this case the L.M.F. will move to the right of Ec in diagram 2.3 and, the more members are willing to give up an increase in their own income, so the further will the hired members' options lie from Ec. In diagram 2.3, the horizontal axis may now be taken to represent the income of hired workers. The

curve T reflects the alternative wage/employment combinations for employing hired workers, members having decided to forsake the surplus represented by the distance between Ec and T in favour of non-members. The preferences of existing members and hired workers will result in some agreed solution along the T curve.

The difference between the L.M.F. and capitalist solutions will now depend on the degree to which the C.F. and L.M.F. owners (shareholders and members respectively) are willing to give up their potential surplus in favour of non-owners working in the firm. An increase in observed capitalist profits would not necessarily see a shift in the comparative factor ratios of the two enterprises.

## 6. Conclusion

We can see from the above discussion that one of the reasons why neoclassical analysis has concluded that there may be significant differences between C.F. and L.M.F. behaviour is because the neo-classical models of the capitalist system assume that wage rates are determined in the labour market at the intersection of the labour demand and labour supply schedules, i.e. exogenous to conditions prevailing in the firm.

Even if labour in capitalist firms are unable to recoup the full amount of the capitalists' potential surplus, i.e. $\alpha > 0$, the differences between the two types of enterprise may completely disappear.

In diagram 23 as $\alpha$ decreases, then the T and L.M.F. curves will move closer together. The two curves will not meet, however,

unless $\alpha = 0$. Why do the two curves remain apart? Because of the existence of a capitalist surplus S which is not distributed to factors of production. We can see, then, that should the L.M.F. retain a similar portion of undistributed surplus (for reinvestment, or because neither labour, or labour earnings, adjusted quickly enough to absorb the entire potential surplus) then differences between the two types of enterprise could completely disappear.

Thus, once we introduce slow wage adjustment or utility maximization into the L.M.F. analysis, then L.M.F. behaviour may be exactly the same as C.F. behaviour with an endogenous wage rate. Differences will only appear if wages in the L.M.F. adjust at a different rate to wages in the C.F.

It will be argued in Chapter 9, however, that once we accept that wages are also determined endogenously under capitalism (as a result of class struggle), then it is no longer relevant to use a neoclassical model to deduce differences between capitalist and labour-managed systems.

FOOTNOTES TO CH. 2

1. IRELAND, N.J. & LAW, P.J. (1982) "The Economics of Labour-Managed Enterprises". Croom Helm. p. 157.

2. ESTRIN, S. (1979) "An Explanation of Earnings' Variation in the Yugoslav Self-Managed Economy". Economic Analysis and Workers' Management. Vol. 13. p. 176, footnote.

3. DOMAR, E. (1966) "The Soviet Collective Farm as a Producer Cooperative", American Economic Review, Vol. 56.

4. NEARY, H.M. (1979) "The Labour-Managed Firm: Monopolistic Competition, Contracts and Uncertainty". Unpublished Ph.D Thesis. University of California, Berkeley.

5. The approach taken in this section draws on ESTRIN, S. (1980), "The Theory of the Self-Managed Firm Reconsidered", University of Southampton Discussion Paper in Economics and Econometrics, No. 8018.

6. ESTRIN, S. (1980) As above.

7. LAW, P.J. (1977) "The Illyrian Firm and Fellner's Union-Management Model". Journal of Economic Studies, Vol. 4(1).

8. LAW, P.J. (1977). As above.

# CHAPTER 3

## THEORIES OF COOPERATIVE FAILURE UNDER CAPITALISM

Most of the theory of the labour-managed firm has been developed within the framework of a "pure" labour-managed economy. Many writers have suggested that cooperatives operating within a capitalist system face additional problems, and that this is why Western cooperatives have been such a failure.

Three questions need to be answered:

(i) Is it true that Western cooperatives have"failed" more than capitalist firms?

(ii) Do existing theories explain why cooperatives have failed?

(iii)Why have cooperatives "failed" under capitalism?

We will attempt to answer these questions in Chapters 5, 6 and 8. In this chapter we review the existing theories of cooperative failure under capitalism. Some of it, such as Vanek's self-extinction forces and Chiplin and Coynes' degeneration theory, are borne out of a neoclassical framework. Other contributions are more pragmatic in their approach. First we must discuss what is meant by cooperative failure.

### 1. What do we mean by "Failure"

How success or failure is perceived, depends entirely on what one hoped of cooperatives in the first place. These hopes have been many and varied. Below, we briefly review the most common objectives set for cooperatives. Each objective has a different measure of success.

Object 1: To overcome the "British Disease" (or similar foreign diseases), i.e. to raise the productivity of workers.

Measure of Success: Comparative economic performance of coops and their capitalist counterparts. Performance is measured in traditional capitalist terms, i.e. productivity, profits, rates of growth.

Object 2: To reduce unemployment.

Measure of Success: The number of jobs created or saved.

Object 3: To return to workers control over their place of work.

Measure of success: The levels of democracy and participation maintained within the coop.

Object 4: To return to labour the surplus expropriated by capital.

Measure of success: Labour incomes are higher and/or the work is less intensive than in capitalist firms.

For all four objects another indicator of success will be the length of life of the cooperative.

In Chapter 5 we will consider whether the British cooperatives have succeeded in any of these objectives.

## EXPLANATIONS OF COOPERATIVE FAILURE

### 2. Introduction

There is a widely held belief in Britain that producer cooperatives (P.C.'s) are doomed to failure. This pessimism certainly goes as far back as the middle of the last century, when the Rochdale Pioneers' first experiment with producer cooperation (rather than consumer cooperation), known as the Rochdale Cooperative Manufacturing Society, degenerated into a joint stock company within six years of its formation.[1] The influential Fabians, Sidney and Beatrice Webb, reinforced this antagonism towards P.C.'s.[2]

In recent times the highly publicised problems of the three so-called "Benn" coops[3] have added to the pessimism. Only Triumph Meriden survived for any length of time, but it too has recently gone into liquidation. Disproportionate press coverage has been given to coops growing out of capitalist closures,[4] and most people remain in ignorance of the large numbers of cooperatives which have managed to survive in Britain.

Explanations of cooperative failure range from the theoretical to the pragmatic. They can be sub-divided into two groups:

(i) Economic - i.e. mainly concerned with objects 1, 2 and 4;

(ii) Degeneration - i.e. can coops maintain a truly democratic structure, or must they inevitably degenerate into capitalist or hierarchical organisations. These two groups are often linked by authors who claim that failure on at least one of these fronts is unavoidable. They would argue that financial success can only be achieved if coops return to traditional managerial practices.

The literature on the labour-managed firm predicts a number of likely obstacles to their success. These issues were covered in earlier chapters. In this chapter we are concerned purely with the additional problems that cooperatives might face under capitalism.

## 3. Problems in Raising Finance

This is a very common explanation of cooperatives' difficulties. Raising finance may be considered more difficult for coops because of (a) the prejudices of financial institutions, or (b) coops' limited ability to raise money by issuing shares to the public.

Jenny Thornley argues that "inadequate capital from inside and outside is a major source of concern for cooperatives".[5] Wilson states that the "major impediments to the emergence of the cooperative enterprise stems from inadequate sources of capital for start-up and cashflow, expansion and growth, and that this is not merely a case of market failure but results from a combination of factors both internal and external to the enterprise."[6] Many more writers could be quoted in support of this position. The wide acceptance of this proposition has incidentally prompted a growing literature on internally financed cooperatives. Cooperatives are assumed to rely heavily on internal finance, either because they cannot, or do not wish, (for fear of losing worker control) to obtain funds from outside. In theory, internal financing may lead to additional problems. These will be discussed later.

4. Prejudice against Cooperatives

Apart from facing prejudice when applying for loans, it has also been suggested that coops have to struggle against prejudices in their day to day operations. Thus suppliers and customers may boycott cooperatives, for straightforward political reasons, or because ignorance of cooperative enterprises leads to uncertainty about their financial stability.

5. Vanek's Self-Extinction Forces

In 1971 Jaroslav Vanek published a paper which he believed contained arguments "so powerful in explaining the shortcomings of traditional or conventional forms of producer cooperatives and participatory firms, that they offer an ample explanation of the comparative failure of these forms in history."[7]

Vanek's explanation relies on the assumption that cooperatives "rely heavily on their own funds." This is because "especially in the Western world, banks and other external creditors are unwilling to finance the totality, or even a major portion, of a labour-managed firm's assets, but, and this is more important, the firm itself will generally not want such financing because this would jeopardise its autonomy and thus undermine its very nature and raison d'etre".

Vanek's model is at its most powerful for production functions with constant returns to scale. Under C.R.S., as was explained by Meade[8], income maximising coops need only attain a certain capital/labour ratio to maximise each member's income. The absolute level of output is not important.

In diagram 3.1, output per labourer, $\frac{X}{L}$, is plotted as a function of the capital/labour ratio, and displays marginal diminishing returns to capital.

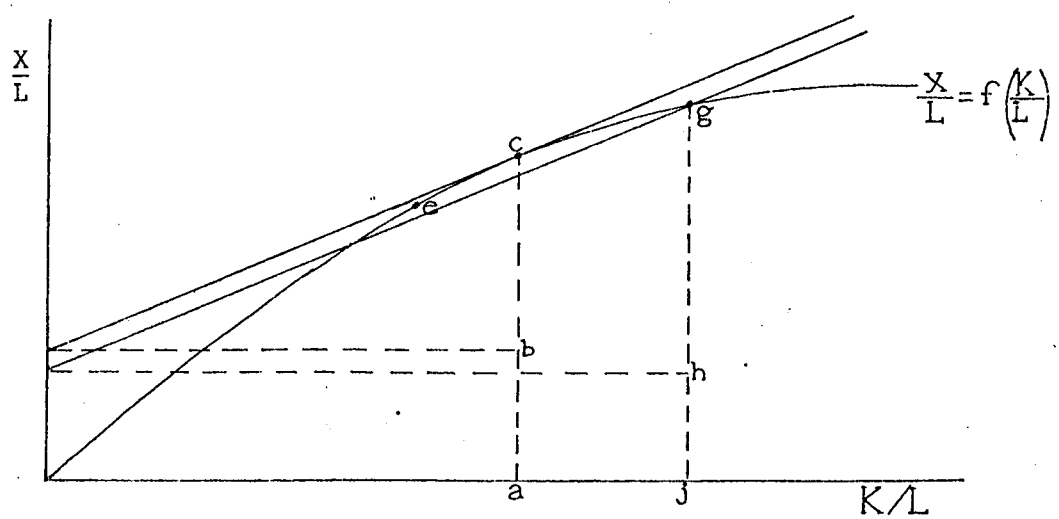



Diagram 3.1 : Vanek's Self-Extinction Forces under Constant Returns to Scale.

Vanek envisages a situation in which members build up capital stocks financed entirely from retained earnings. At the time that the equipment is purchased the use of internal funds has an opportunity cost to the members equal to the rate of interest that could be earned by

depositing the money in a bank. Therefore the optimum capital labour ratio will be the same as that using external finance.

This optimum ratio is at a in diagram 3.1. At this point income per worker, ba, is at a maximum, given the cost of renting capital, $P_K$. However, a only indicates the K/L ratio. Given the number of members that the coop has, or would like to have, then they will accumulate capital until the K/L ratio equals a.

Another fundamental assumption in this model is that all assets are owned collectively, and cannot be withdrawn, as, say, appreciated shares, when a member departs. Vanek also simplifies the argument by assuming that the capital has infinite durability, i.e. no expenditure is necessary to maintain and repair the machinery.

Vanek points out that if capital had been externally financed, then the segment bc in diagram 3.1 would represent the share of output per worker paid to capital, and ba would be the earnings of each worker. If the coop had paid for the capital from internal funds, then labour can now enjoy the income represented by ac, as repayment of loans at the rate $P_K$ would not be necessary. In other words, Labour now reaps the return of its earlier thriftiness.

Vanek describes four forces that he believes will now act on the firm.

1. THE FIRST SELF-EXTINCTION FORCE: As members leave, perhaps because they change jobs or retire, then the K/L ratio will rise, and so the coop will find itself at a point to the right of c in diagram 3.1 e.g., g. With external finance, such a shift would raise the level of loan repayments per worker to, say, gh. Each worker's earnings would therefore fall from ba to hj. However, because of internal financing labour will receive the total value of jg. In other words, those members who

stay on enjoy the rewards not only of their own foregone income, but also that of members who have left. Consequently, as members leave, those remaining will find themselves enjoying a rising income, and so they will be happy to allow the membership to run down. This process could continue until there was only one member left, or, more realistically, for non CRS production functions, to the point where increasing returns set in.

2. THE SECOND SELF-EXTINCTION FORCE: If point c in diagram 3.1 represented the optimum K/L ratio, i.e. where $P_K$ equals the value of the marginal product of capital, then at g the rate of interest will be more than the M.P.K. Those members remaining could therefore raise their income by selling capital equipment, distributing the income, and putting the proceeds in the bank where it can earn the prevailing interest rate. The departure of members will therefore encourage those left to disinvest.

3. THE UNDERINVESTMENT FORCE: Vanek's underinvestment force was described in Chapter 1. If cooperative members are unable to recoup the principal of their investment, they will only employ capital up to the point where the value of its marginal product is equal to $P_K + D$ $(D > 0)$. D represents an addition to the return on capital sufficient to rectify for the loss of principal. Consequently, for a given number of workers, coops will use less capital than capitalist firms.

4. THE NEVER-EMPLOY FORCE: Suppose that the firm finds itself at the point e in diagram 3.1 (perhaps because of an over enthusiastic response to the second force). The firm may now invest in more capital and expand output until $K/L = a$. This is the only situation in which the coop might be induced to increase output, but it does so by increasing capital. The income maximizing cooperative will never have an incentive to increase labour.

Vanek admits that his forces (excluding number 3) will be less powerful for coops working under the traditional U shaped technology. This occurs because the loss of economies of scale as output falls counteracts the effects of the increasing K/L ratio on members' income. Vanek believes, however, that the forces would still impinge on the cooperatives decisions, and would tend to keep cooperatives small, under-capitalised, and reluctant to take on new members.

6. Degeneration

The idea of degeneration of cooperatives comes in at least three forms. There is straightforward degeneration into a capitalist firm, which occurs when outsiders gain control by buying up a majority of the shares. This is what happened to the Rochdale Cooperative Manufacturing Society. Next there is degeneration into a quasi capitalist firm, in which a small number of members employ the majority of workers who are not given the option of becoming members. Finally there is degeneration into hierarchical or managerial structures. In this case, although the cooperative may remain legally a cooperative, with workers in theory dictating policy, in fact decision making has returned to managers, or non-worker members.

The Webb's were convinced that if coops did not fail as business concerns, then they must inevitably cease "to be democracies of producers managing their own work, and ... become in effect associations of capitalists ... making profits for themselves by the employment at wages of workers outside the association."[9] The Webbs apparently based their opinions on the experiences of producer cooperatives at that time, but they did not make clear why such degeneration must be inevitable. More recently Chiplin and Coyne have used neoclassical theories to argue "that it always 'pays' a member to try and exclude other members", and that "the incentives

are such that it is unlikely that a pure L.M.F. could exist alongside a pure capitalist firm."[10]

We saw in Chapter 1, that according to neoclassical theory, in general equilibrium workers in the income maximizing L.M.F. will earn exactly the same as workers employed by a capitalist firm. This incidentally, is one explanation why coops must inevitably fail, in the sense that the members will be no better off than if they had worked within a capitalist firm.

Even using neoclassical theory, however, it is an accepted fact that members of an income maximizing cooperative will earn higher incomes than their counterparts in capitalist enterprises when the C.F. is earning a profit. The important proviso of all other things being equal, e.g. production function, intensity of work, access to markets, of course must apply. Ironically, it is this fact which prompts Chiplin and Coyne to suggest that degeneration is inevitable.

We saw in Chapter 1 that the income maximizing L.M.F. will produce at the point where,

$$Y = \frac{P_X X - P_K K}{L} = P_X F_L \quad , \quad P_K = P_X F_K$$

As we saw in Chapter 2, wages in the C.F. will be equal to,

$$W = \frac{P_X X - P_K K - S}{L} = P_X F_L$$

where S is the surplus earned by capitalists. The cooperative members could, therefore, undoubtedly benefit by employing additional workers at the going wage rate of W, which is less than Y. Existing members will,

in fact, maximise their income by employing non-members up to the standard capitalist point where $W = P_X F_L$. The income of members will be improved because the marginal product of the extra workers will be higher than their wage rate. The coop members will be fundamentally no different from a small group of capitalists combining to rake surplus from the labour of their employees. Furthermore, the smaller the membership as a proportion of the total workforce, the higher the income enjoyed by the members. It seems then that coops cannot win. Either they will find themselves no better off than capitalist employees, or they will degenerate into capitalist structures. Chiplin and Coyne believe that "if a pure labour-managed economy is to emerge ... all other forms of organisation would need to be proscribed by law". In other words, that coops and capitalism cannot co-exist.

## Conclusion

This concludes the survey of theories of cooperative failure under capitalism. In Chapter 6 we will consider whether evidence from the C.P.F. cooperatives supports these theories.

FOOTNOTES TO CH. 3.

1. OAKESHOTT, R. (1978) "The Case for Workers' Coops", Routledge & Kegan Paul. pp. 55 and 56.

2. WEBB, S. & B. (1914) "Cooperative Production and Profit Sharing". New Statesman, Special Supplement, 1914.

3. Scottish Daily News, Kirby Manufacturing and Engineering, and Triumph Meriden.

4. Other examples are Fakenham Enterprises and the Nottingham Evening Post.

5. THORNLEY, J . (1981) "Workers Co-operatives: Jobs and Dreams". Heinemann, p. 80.

6. WILSON, N. (1982) "Economic Aspects of Worker Cooperatives in Britain". Paper 12 of the Plunkett Foundation Seventh Cooperative Seminar. p.74.

7. VANEK, J. "The Basic Theory of Financing of Participatory Firms", in VANEK, J. (ed.) (1975) "Self-Management". Penguin Education. p. 446.

8. MEADE, J.E. (1979). "The Adjustment Process of Labour Cooperatives With Constant Returns to Scale and Perfect Competition". Economic Journal, Vol. 89.

9. WEBB, S & B. (1921) "A Constitution for the Socialist Commonwealth of Great Britain". Quoted by JONES, D.C. in COATES, K. (ed.) (1976) "The New Worker Cooperatives". Spokesman Books.

10. CHIPLIN, B. & COYNE, J. "Some Economic Issues of a Workers' Cooperative Economy", in CLAYRE, A. (ed.) (1980) "The Political Economy of Cooperation and Participation". Oxford University Press. p. 127 & 128.

11. CHIPLIN, B. & COYNE, J. (198) As above, p. 128.

PART B:

# EMPIRICAL EVIDENCE FROM COOPERATIVES WORKING WITHIN CAPITALISM

# CHAPTER 4

## TESTING NEOCLASSICAL PREDICTIONS OF THE BEHAVIOUR OF CAPITALIST AND LABOUR-MANAGED FIRMS UNDER CAPITALISM

We saw in Chapter 1 that neoclassical theory has produced a number of predictions for the behaviour of the L.M.F. which might be tested empirically. In fact empirical tests of the theory are very thin on the ground, and are almost universally based on the Yugoslav economy. These will be discussed in Chapter 11.

Only one study has been published to date which is designed to test the neoclassical theory of the L.M.F. among cooperatives working within a capitalist system. This is the article by Jones and Backus which uses data from the C.P.F. footwear cooperatives.[1] The purpose of their study is to test Vanek's theory of financing, and so we will defer discussion of their results until Chapter 6.

This chapter will contentrate on neoclassical predictions of L.M.F. behaviour in the short and long-run. The method used will be to compare the cooperatives' behaviour with a sample of capitalist firms. We saw in Chapter 2, however, that the behaviour of the two types of enterprise might well converge if we make some adaptions to the pure neoclassical models of the profit maximizing C.F. and income maximizing L.M.F. This inevitably leads to the problem of distinguishing between whether it is the C.F.'s or L.M.F.'s which are not behaving according to theory. The problems become even more acute if we begin to doubt whether the behaviour of firms of any sort are adequately described by neoclassical models, even if the models are adapted. It may be that the most important forces acting on firms are not included in neoclassical models. If this is true, and in Chapter 8 we will argue that it is true, then the results reported in this Chapter and Chapter 6 , are unlikely to help us understand the experiences of C.P.F. cooperatives.

## 1. The Data

The Data used in the following five chapters is described in Appendix 3. As explained in the appendix, most private firms were exempted from filing accounts with the Registrar of Companies until the passing of the 1967 Companies Act. Consequently, detailed information on the sample of capitalist firms is usually only available from 1969 onwards. By this time so many of the original sample of capitalist firms had ceased to trade that accounts were available for only a small number of firms. There is the added problem that information on wages and salaries was rarely reported by these companies.

Two new samples of firms were therefore selected from "Inter-Companies Comparisons" Business Ratio Reports. These samples were taken from the reports on footwear and clothing manufacturers. Unfortunately the ICC series on Printers were introduced too late to be of value to this study. Appendix 3 contains a description of the I.C.C. sample and a comparison of the C.F. and C.P.F. samples.

When studying short-run behaviour aggregate industry data was sometimes substituted when individual firm data was not available. This was possible because short-run models of the C.F. predict the absolute direction of change in observable variables. Thus, we expect to find an expansion in the workforce following a sudden boom in demand. No such clear cut prediction is available in the long-run. The anticipated differences between the L.M.F. and C.F. are merely of degree, rather than opposite. Consequently it was not possible to use aggregate data for comparison in the long-run. As a result, the evidence on the long-run behaviour of the enterprises is very limited.

## 2. Short-Run Predictions

The short-run is some period of time in which capital is fixed. The enterprise can only adjust labour and other variable inputs (M) in the time available.

It is well known that a rise in demand will induce the neo-classical profit maximizing firm to raise output by increasing the work-force while holding the wage rate constant. It was explained in Chapter 1 that in the simple case of only two inputs, capital and labour, that the pure income maximizing L.M.F. would reduce output and labour in response to a similar shift in demand.

Chapter 1 also contained a list of explanations as to why the L.M.F. might not display such perverse behaviour. Some of these explanations relied on the assumption of a fixed labour force in the short run. Others, such as those which introduced more than one variable input or flexible working hours, removed the perverse response of output, but still predicted a fall in the labour force with a rise in demand.

The size of the labour force is therefore vital to most of these theories. This chapter will therefore concentrate on labour force adjustments.

The immediate problem is to distinguish short-term adjustments from long-term reconstruction. The method followed has been to identify long-term trends in the industries concerned and then to study years which showed an obvious shift away from the trend.

Study of the individual capitalist firms indicated that they had experienced a wide variety of conditions during the 1970's. Indeed for most firms their individual experience was apparently as important, and probably more so, than general progress throughout the industry. It would appear that many firms are buffeted by forces which are missing from the neoclassical model of the firm. We will return to look at these in Chapter 7. In this chapter we will continue to assume that firms throughout an industry face the same trading conditions. Each of the industries in which cooperatives operated will be discussed in turn.

## 3. Long-Run Predictions

The neoclassical predictions of perverse short-run behaviour of the L.M.F. lends itself most easily to empirical verification. The literature has also produced numerous explanations of why such a perverse response may not be observed. We will discuss in section 12 whether any of these explanations fit evidence from the C.P.F. cooperatives.

The neoclassical analysis of the L.M.F. in the long-run has been much less controversial. Apparently most authors accept the conclusions derived from the models. Indeed, the long-run analysis has frequently been used to explain the behaviour of the Yugoslav economy (see Chapter 11).

The problem with testing this theory is that many of the characteristics attached to Western cooperatives may hide their anticipated response. Thus it is often argued that cooperatives face prejudice in the market and when applying for loans. Such prejudice may well lead to smaller size and slower growth, while forcing the coop to be more labour intensive than they might wish.

It is necessary, then, not to look for absolute differences between cooperatives and capitalist firms, e.g. smaller output, higher capital intensity, but to search for differences in the enterprises' response to changing conditions.

In Chapter 2 we saw that a rise in the profitability of an industry is equivalent to moving the Eym-Elm curve in diagram 2.2 to the right. The income maximizing L.M.F. will always position itself at Eym on the curve. Consequently, as profitability in the industry increases, we would expect the capital/labour ratio of the L.M.F. to increase as a proportion of the C.F. capital/labour ratio (and vice versa if profits decrease). The proof of this is contained in Appendix 2.

In order to test the long-run predictions we will attempt to identify fairly long periods during which general profitability in the industry has shifted. Changes in the K/L ratios of capitalist firms will then be compared with that of the cooperatives. Unfortunately the concept of the "long-run" is inevitably limited by the time span for which suitable data is available. It may be that this is not a long enough period to allow the full adjustment of all factors of production.

## 4. Long-Term Trends in the Footwear Industry

Martin and O'Connor calculated real rates of return for private manufacturing companies in Britain.[2] Their results are shown in Table 4.1.

TABLE 4.1 REAL RATES OF RETURN OF PRIVATE MANUFACTURING COMPANIES .

| Year | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 |
|---|---|---|---|---|---|---|---|---|---|---|
| Rate of Return* | 12.9 | 10.7 | 9.7 | 10.4 | 11.1 | 10.4 | 9.0 | 9.0 | 9.1 | 8.9 |
| Year | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 |
| Rate of Return* | 7.3 | 7.5 | 7.8 | 7.6 | 3.3 | 3.1 | 3.2 | 4.7 | 5.0 | 2.9 |

Source: Martin & O'Connor. See Footnote 2.

* Rate of return = Gross trading profit plus rent received, less stock appreciation, less capital consumption at replacement costs as percentage of net capital stock (fixed assets other than land) at replacement cost plus book value of stocks.

Martin and O'Connor comment that "rates of return for the U.K. show a downward trend from at least 1960, with a sharp decline in 1974-5, and a partial recovery up to 1978 and a further sharp drop in 1979.

Footwear manufacturers were no exception. It is impossible to obtain information on profitability in the footwear industry before the 1970's. The Footwear Industry Study Steering Group report , however, that a "study carried out by the consultants A.I.C. in 1970 concluded that the trend in profitability had been downwards in all sectors of the industry since 1960."[3]

The British Footwear Manufacturers Federation (B.F.M.F.) began to publish measures of industry profitability in 1972. Their results are reported in Table 4.2. The Footwear Industry Study Steering Group (F.I.S.S.G.)

commented that the B.F.M.F. estimates "are based on historic cost accounts, and hence, given the acceleration of inflation over the period, the trend in current cost terms would have looked a great deal worse. A rough adjustment to the 1974 and 1975 figures to allow for the current cost of replacing stock and capital equipment suggest that the industry barely broke even in 1974 and made a loss in '75."[4]

The Footwear Industry also suffered a massive decline in its labour force between 1950 and 1978. This was mostly as a result of extensive import penetration, rising from 4.4% of U.K. sales (measured in pairs) in 1950 to 42.5% of sales in 1978.[5]

## 5. Short-Term Expansion in the Footwear Industry 1970-1978

We will begin by looking at the period 1970-78, as these are the years for which information on individual firms is available.

The Census of Production records a decline in total employment in the industry for every year between 1970 and 1978. The B.M.F.M. reported a similar experience among its members, although one year, 1977, saw the workforce maintained at the same level as the previous year.[6]

The long-term trend was, therefore, undoubtedly of a contracting workforce. The samples of capitalist firms and cooperatives followed this trend. (See Chapter 5, Section 4 ). Two years, 1972 and 1977 stand out against this trend. The Census of Production records a rise over the previous year in employment per enterprise, even though total employment was still falling in these two years.

Census of Production data covers a calendar year. Many firms use a different financial year. Consequently we would expect a rise

in firms' employment to be reported in either 1972 and 1977, or in the following years, 1973 and '78.

The samples of individual firms lend support to the picture that emerges from the aggregate figures. Ten of the ICC footwear sample reported labour force figures for the 1970's. Eight recorded a rise in their workforce in either 1972 and/or '73. Nine out of the ten recorded an increase in 1977 and/or '78. The original sample of C.F.'s followed a similar pattern. Information is available on sixteen firms. Thirteen increased their labour force in 1972 and/or '73, although only ten did so in 1977 or '78. Two more firms, however, managed to hold their labour force steady in 1977.

Table 4.2 illustrates profits and earnings in the footwear industry. Real profits rose in the years of expansion, i.e. 1972 and 1977, and peaked in the following years. The rise in real earnings was poor in 1972 and 1977. In fact the high rate of inflation forced real earnings down in 1977. Real earnings recovered well in the following years however, i.e. 1973 and '78.

Table 4.2 suggests that the expansion in the workforce noted in 72/73 and 77/78 was accompanied by a rise in industry profitability, as we might expect. There is also evidence that the workforce soon responded to the improved conditions enjoyed by their employers, and were able to win back some of the short-term improvement in the surplus.

TABLE 4.2 PROFITS AND EARNINGS IN THE FOOTWEAR INDUSTRY

| Year | Index of Deflated Profits C & F (1) | Footwear Manuf's Profita-bility(2) | % Increase In Ave. Earnings (3) | % Increase in Retail Prices | % Increase in Real Ave. Earnings. |
|---|---|---|---|---|---|
| 78 | 60.0 | 6.1 | 13.2 | 8.3 | 4.9 |
| 77 | 50.4 | 5.0 | 12.2 | 15.8 | -3.6 |
| 76 | 42.5 | 4.5 | 16.6 | 16.5 | 0.1 |
| 75 | 49.6 | 3.7 | 22.7 | 24.3 | -1.6 |
| 74 | 74.5 | 4.1 | 18.9 | 16.0 | 2.9 |
| 73 | 80.6 | 5.7 | 17.0 | 9.2 | 7.8 |
| 72 | 78.6 | 4.5 | 8.9 | 7.1 | 1.8 |
| 71 | 70.7 | N/A | 10.5 | 9.4 | 1.1 |

(1) Source: Annual Abstract of Statistics for Footwear and Clothing Manufacturers. Index of Gross trading profits deflated by R.P.I. 1950=100.

(2) Source: B.F.M.F. "Footwear Industry Statistical Review". "Profitability" = Pre-tax Profit ÷ Turnover.

(3) Source: Census of Production. Average Earnings were calculated by dividing the annual wages bill by the number employed.

## 6. Capitalist Footwear Firms 1972/3

We next turn to the experiences of individual capitalist firms. Unfortunately information on wages and salaries were only available for five of the original sample of footwear firms. Much of the evidence will therefore be concentrated on the I.C.C. firms.

TABLE 4.3 EXPERIENCES OF THE ICC FOOTWEAR SAMPLE 1972-73

| No. of Firms | Increased Workforce in 72 or 73 | IN THE SAME YEAR AS WORKFORCE ROSE | | | |
|---|---|---|---|---|---|
| | | Real Potential Surplus Rose | Real Profits Rose | Real Ave. Earnings Rose | Ave.Earnings rose more than ave. in footwear |
| 3 | YES | YES | YES | YES | YES |
| 1 | YES | YES | YES | YES | NO |
| 2 | YES | YES | NO | YES | YES |
| 1 | YES | YES | NO | YES | NO |
| 1 | YES | NO | NO | NO | NO |
| 1 | NO | YES | YES | YES | NO |
| 1 | NO | NO | YES | NO | NO |

Table 4.3 summarises the experience of the ICC Footwear firms in 1972/73. The table not only describes movements in labour force, profits and earnings, but also in "real potential surplus". In Chapter 2 the "potential surplus" was described as "that profit which a C.F. might achieve after a rise in product price if all factors continued to be paid at their old, zero profits price." (see p. 46). In this chapter the "real potential surplus" (R.P.S.) is estimated by adding profits before tax to the annual wages bill and deflating this figure by the retail price index. The R.P.S. is therefore different from the P.S. because it includes what would have been the wages bill had wages remained constant. This estimate of the R.P.S. is useful, however, because it gives some indication of whether profits fell because of changes in real earnings or in trading conditions.

The changes in average earnings described throughout this chapter will reflect changes in the earnings from piecework and overtime as well as movements in the wage rate. Goodman reports that in 1975, 71% of adult operatives in footwear worked on payments by results.[7] Unfortunately data is not available which would allow these two factors to be separated out.

We can see from Table 4.3 that seven of the eight firms which expanded their labour force in 1972/73 also enjoyed a rise in their R.P.S. in the same year. The remaining firm recorded such a massive expansion in employees (87%) during 1972 that it seems probable that it merged with or took over another firm. The consequent readjustment apparently brought profits down, although by 1974 they had risen to a new high.

Three firms expanded their labour force, and saw a rise in R.P.S. but real profits fell. Why was this? Two of these firms would have been able to maintain a fairly stable level of profits if real average earnings had stayed at the level of the previous year. In one firm, although real earnings rose, they lagged well behind the national increase. This firm would have suffered a serious decline in profits even if real earnings had remained constant. This suggests that the firm miscalculated and expanded its workforce by too much.

Two of the ICC firms did not expand their labour force. Was this because they did not enjoy the improved conditions experienced by most of the industry? This may have been true of one firm which recorded a fall in R.P.S. This firm did, however, manage to raise real profits by reducing real payments to workers. The other firm

showed the signs that we would expect to initiate an expansion in the workforce, i.e. a rise in R.P.S. and real profits. It chose, however, to continue to reduce its workforce.

We will look briefly at the experiences of the original sample of capitalist footwear firms in 1972/73. Thirteen added to their employees in 1972 and/or 73. Ten of these also experienced a rise in real profits in the same year. Unfortunately data on average earnings is only available for four of these expanding firms. In only one firm did real average earnings fall, and this was the only one of the four which experienced a fall in real profits at the same time. This would appear to be another example of over-expansion of the workforce.

Three firms in this sample did not expand their workforce in 1972 or '73. Two of the firms enjoyed a substantial rise in real profits in both years. For one firm in which earnings data is available, both R.P.S. and real earnings rose. The third firm suffered a slight drop in real profits in 1972, but recovered strongly in '73.

We may summarise the experiences of the ten ICC firms and the five C.F.'s for which wages data was available. This is shown in Table 4.4.

TABLE 4.4 SUMMARY OF FOOTWEAR FIRM EXPERIENCES 1972/73

| No. firms | |
|---|---|
| 2 | ↑R.P.S. + ↑L + no rise in real earnings (pure profit maximizers) |
| 8 | ↑R.P.S. + ↑L + rise in real earnings (impure profit maximizers) |
| 2 | ↑R.P.S. + ↓L + rise in real earnings (perverse response) |
| 2 | ↓R.P.S. + ↑L + no rise in real earnings (over-expansion of L) |
| 1 | ↓R.P.S. + ↓L + no rise in real earnings (no rise in demand) |
| 15 | |

This small sample of footwear manufacturers displays evidence of a shift in the footwear market in the early seventies which raised the potential surplus which could be earned by firms. Only one of the fifteen firms appeared not to experience these improved conditions.

Twelve firms responded by expanding their labour force. Two of these firms appear to have over-expanded and found both real profits and R.P.S. falling. The majority (10) of the firms expanded the workforce, but also had to pay an increase in real earnings to their employees. As a consequence, three out of the ten suffered a fall in real profits. It is not possible to ask whether this rise in employees' earnings induced firms to reverse the expansion. This is because most firms cut back in 1974 in response to a sudden contraction in demand.

Two firms fitted the neoclassical model of tne firm, i.e. they experienced a rise in R.P.S., expanded the workforce while holding down real average earnings, and consequently enjoyed a rise in real profits. Two firms reacted in the reverse way. Although R.P.S. rose, and real earnings also improved, these firms cut back on their workforce. This behaviour is exactly that predicted for the L.M.F. Furthermore, two C.F. firms for which earnings data is not available also cut back their labour force while enjoying a very substantial rise in real profits. It seems very likely that these two were also behaving perversely.

## 7. Capitalist Footwear Firms 1977/8

TABLE 4.5 EXPERIENCES OF THE ICC FOOTWEAR SAMPLE 1977/78

| No. of firms | Increased workforce in 72 or 73 | IN THE SAME YEAR AS WORKFORCE ROSE | | | |
|---|---|---|---|---|---|
| | | Real Potential Surplus Rose | Real Profits Rose | Real Ave. Earnings Rose | Ave.Earnings rose more than ave. in footwear |
| 2 | YES | YES | YES | YES | YES |
| 2 | YES | YES | YES | YES | NO |
| 4 | YES | YES | NO | YES | YES |
| 1 | YES | YES | YES | NO | NO |
| 1 | NO | YES(77)<br>YES(78) | YES(77)<br>NO(78) | NO(77)<br>YES(78) | NO(77)<br>YES(78) |

Table 4.5 summarises the experiences of ICC footwear firms in 1977/8. The scene is very similar to 1972/3. Almost half of the firms which expanded their workforce did not manage to improve their real profits, although the R.P.S. rose. In all four cases average earnings rose by more than the national average.

One firm did not expand employment although R.P.S. rose in both 1977 and 1978. 1977 also saw a big rise in the real profits of this firm (82% higher than 1976), while average earnings, which were well below the national average, fell back even further. By 1978, however, labour managed a striking improvement in its earnings, and this held back any further improvement in profits.

Only ten of the 16 original footwear sample increased employment in 1977 or '78. All but one of these enjoyed an increase in real profits in the same year. Six firms did not expand their labour force, but all of these experienced a rise in real profits in 1977 and/or '78.

Data on wages are available for five of the original footwear sample. All of these increased employment in 1977 or '78. One firm suffered a drop in R.P.S., real profits, and real earnings. This appears to be an example of over expansion. Three firms followed the more usual pattern of an increase in labour, profits and real earnings. The fifth firm managed to hold down real earnings, while enjoying a rise in R.P.S. and real profits.

TABLE 4.6 SUMMARY OF FOOTWEAR FIRM EXPERIENCES 1977/78

| No. of Firms | |
|---|---|
| 2 | ↑R.P.S. + ↑L + no rise in real earnings (pure profit maximizers) |
| 11 | ↑R.P.S. + ↑L + rise in real earnings (impure profit maximizers) |
| 1 | ↑R.P.S. + ↓L + rise in real earnings (perverse response) |
| 1 | ↓R.P.S. + ↑L + no rise in real earnings (over-expansion of L) |
| 0 | ↓R.P.S. + ↓L + no rise in real earnings (no rise in demand) |
| 15 | |

Table 4.6 shows much the same pattern as Table 4.4. The majority of firms might be classified as "impure" profit maximizers, i.e. they expanded the labour force in response to a rise in demand, but labour managed to win back a large part of the rise in R.P.S. In some cases this caused firms to suffer a loss in real profits.

Firms showing a perverse response are probably under-represented in Table 4.6. Six out of the original 16 footwear firms did not expand their labour force in either 1977 or '78. They all, however, enjoyed a rise in real profits in at least one of these

years. All of these may have been behaving perversely. Unfortunately earnings data is not available to confirm this.

## 8. Footwear Cooperatives 1970-78

If cooperatives enjoy an increase in demand at the same time as private firms in the industry, then the neoclassical model of the pure L.M.F. would predict that they would decrease their work-force while enjoying an increase in real earnings per worker.

Two different measures might be used for real earnings of cooperative members. One is the earnings distributed to workers, i.e. their wages plus the annual bonus. A purer measure would also include profits per worker after payment of the bonus, i.e. R.P.S. per worker. In theory members would want to maximize potential surplus per worker in order to benefit from an immediate distribution of this surplus, or by enjoying an increase in earnings in the future as a result of judicious reinvestment of the surplus. This model is more convincing for cooperatives, such as those in Mondragon, in which members may withdraw their share of the undistributed profits on leaving the cooperative. CPF members formally own a part of the cooperative's assets through their ownership of shares. Under British law, however, cooperative shares may only be redeemed at their nominal value. Members are therefore unable to retrieve their share of the undistributed profits via the appreciated value of the shares.

It is questionable, therefore, that CPF members would wish to maximise the potential surplus unless this is directly related to their take home pay. In this section we will consider how both measures of income change.

TABLE 4.7 EXPERIENCES OF CPF FOOTWEAR COOPERATIVES 1972-73

| Name of Co-op | Increased Workforce in 72 or 73 | IN 1972 OR 73 TREND WAS UP FOR | | | | |
|---|---|---|---|---|---|---|
| | | Real Potential Surplus | Real Profits | Real Ave. Earnings (1) | Ave. Earnings as % national ave. in footwear | Real Potential Surplus per worker |
| Equity | YES | YES | YES | YES | NO | YES |
| Avalon | NO | YES | YES* | YES | YES | YES |
| NPS | No data | - | - | - | - | - |
| St. Crispin | NO | NO | NO | YES | YES | YES |

* Fall in real trading loss

TABLE 4.8 EXPERIENCES OF CPF FOOTWEAR COOPERATIVES 1977-78

| Name of Co-op | Increased Workforce in 77 or 78 | IN 1977 OR 78 TREND WAS UP FOR | | | | |
|---|---|---|---|---|---|---|
| | | Real Potential Surplus | Real Profits | Real Ave. Earnings (1) | Ave. Earnings as % national ave. in footwear | Real Potential Surplus per worker |
| Equity | YES | YES | YES | YES | YES | YES |
| Avalon | YES | YES | YES | NO | NO | NO |
| NPS | NO | YES | YES | NO | NO | NO |
| St. Crispin | YES | YES | YES | YES | NO | YES |

(1) Average Earnings are calculated by adding the annual wages and salaries bill to the annual bonus and dividing by the number of workers.

Four footwear cooperatives continued to operate through the 1970's. Their experiences are describes in Tables 4.7. and 4.8. We will look at each in turn.

Equity Shoes followed the same pattern as the majority of the footwear firms. The workforce was increased in 1973 and also in 1977 and '78. The real value of profits, potential surplus and average earnings all rose at the same time. Real potential surplus per worker also increased in 1973 and 1977. It fell back slightly in 1978, although was still well above the 1976 level.

Avalon Footwear suffered a continuous decline in its workforce between 1969 and 1975. This is not surprising when we observe that it also made a loss on trading for every year between 1969 and 1975. It managed to remain solvent because of the exceptionally large income that it derived from its investments. Income from this source decreased rapidly, however, as the investments were sold off. 1973 did witness the trading loss being almost halved from the previous year. The rapid decline in labour was also momentarily halted, with only one less worker recorded. The two previous years had seen drops of 14 and 7. After 1973, however, the workforce was once more cut back sharply, with a reduction of 7 between 1973 and 74 and of ten the following year. Workers' earnings also rose from well below the national average in 1972 to just above the industry average in 1973. By 1974, however, average earnings were once more falling behind the average in footwear.

From 1976 onwards Avalon Footwear managed to move back into profit, and increased its workforce slightly in 1976 with a larger increase in 1977. Average earnings fell back in 1977, but had caught up by 1978.

Unfortunately information on the number of workers is not available for NPS Shoes for the years 1970-72, and 1976. We therefore cannot be certain whether the labour force was increased in 1972. The records show, however, that N.P.S. had the same number of workers in 1973 as in 1969, which suggests that the cooperative maintained a fairly stable workforce throughout the early seventies. The same pattern continued to 1978, with the workforce never being more than 68 or less than 66. Average earnings decreased as a percent of the industry average between 1975 and '78. Real profits improved significantly in 1977 and '78. They were not sufficient, however, to outweigh the fall in earnings and R.P.S. per worker fell back.

Finally we come to St. Crispin Productive Society. St. Crispin reduced its workforce from 99 in 1971 to 84 in 1972 and 80 in 1973. This was combined with a fall in real profits (in fact it made a loss in '72 and '73), as well as a fall in the real value of potential surplus. Both the R.P.S. per worker and real average earnings rose substantially in 1972, but fell back compared with the average rise in footwear earnings in 1973.

The real value of St. Crispin's profits in 1977 and '78 were considerably better than previous years. The cooperative did increase its workforce, but only by one in each year from a base of 91 in 1976. In other words, the labour force remained almost constant. Real average earnings were low in 1977 although they improved in '78. As a percent of national average, earnings remained almost constant. The R.P.S. per worker showed an improvement in both years.

What, if anything, can we conclude from the behaviour of the footwear cooperatives in the '70's? Certainly there was no widespread tendency to cut back on the labour force when capitalist firms were

expanding. Avalon did reduce the workforce in years when most firms were growing. The improvement in trading conditions in 1973 did, however, enable Avalon Footwear to stem the decline in its workforce. In fact, employment remained virtually the same between 1972 and '73. Similarly, NPS maintained an almost constant labour force in the late seventies, even though real profits were improving. Only one cooperative showed any evidence of a neoclassical reaction to improved trading conditions. This was St. Crispin Productive Society, which reduced its workforce in 1972 and 1973, but at the same time suffered a fall in the real value of both profits and the real potential surplus. The real potential surplus per worker did improve slightly in 1972, but fell below the 1971 value in 1973. It would be possible, therefore, to accept St. Crispin's behaviour in 1972 as the classic short-run reaction of the labour managed firm to an increase in demand. On the other hand, it must be remembered that St. Crispin made a loss in 1972. The loss occurred in 1972 because average earnings were well up on the previous year, although the increase was only slightly more than found throughout footwear. Did the cooperative plan to maximize members income by cutting back the labour force, or did it miscalculate the rise in wages which could be paid, and, finding that it was running into loss, cut back the workforce?

Certainly the cooperatives did not show a general tendency to react perversely to changes in demand. Equity Shoes, which earned a reasonable rate of profit through the 1970's behaved exactly as its capitalist counterparts. Other cooperatives displayed a tendency to maintain a more stable workforce than capitalist firms.

## 9. Footwear before 1970

Most companies were exempt from filing accounts with the Registrar of Companies until the passing of the 1967 Companies Act. Consequently there is a dearth of information about both aggregate and individual companies prior to 1970. Unfortunately far more is known about the footwear cooperatives before 1970, as most of them ceased trading in the late 1960's.

One period does stand out, however, as moving against the trend of steady decline in the footwear industry. This was the first few years of the 1960's.

The Department of Employment Gazette recorded an increase in employment in the industry in the years 1959, '60 and '61 (using figures for July of each year). Footwear employment reached a peak in 1961 and then fell back in 1962 and '63. It made a slight recovery in 1964, but then went into continuous decline for the rest of the decade.

Profits are not available for the footwear industry on its own. Figures for both clothing and footwear manufacture are reported in the Annual Abstract of Statistics. They are shown in Table 4.9.

TABLE 4.9 DEFLATED INDEX OF COMPANIES GROSS-TRADING PROFITS 1957-65

| YEAR | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 |
|---|---|---|---|---|---|---|---|---|---|
| Clothing & Footwear | 67.7 | 59.8 | 72.1 | 84.9 | 73.0 | 63.8 | 73.5 | 71.2 | 79.4 |
| All Manufacturing | 100.0 | 93.9 | 105.2 | 115.6 | 105.2 | 101.4 | 107.0 | 115.7 | 113.9 |

Source: Annual Abstract of Statistics.

The Clothing and Footwear industries followed the same pattern as other manufacturers. Real profits rose to a peak in 1960 from a low in 1958. Profits then dropped sharply to a low in 1962, and then began to recover. The rise in real earnings in the footwear industry, shown in Table 4.10 mirrored shifts in profitability in the industry.

TABLE 4.10 AVERAGE EARNINGS IN THE FOOTWEAR INDUSTRY 1957-65

PERCENTAGES

| Year | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 |
|---|---|---|---|---|---|---|---|---|---|
| Rise in Ave.* Earnings | 5.6 | 5.3 | 3.0 | 5.3 | 3.3 | 4.3 | 5.8 | 6.0 | 10.0 |
| Rise in Retail Prices | 3.7 | 3.7 | -0.1 | 1.0 | 3.4 | 4.2 | 2.0 | 3.2 | 4.8 |
| Rise in real earnings | 1.9 | 1.6 | 3.1 | 4.3 | -0.1 | 0.1 | 3.8 | 2.8 | 5.2 |

*Average earnings were calculated as in Table 4.2. For years in which there was no Census of Production, the % rise was estimated using Employment Gazette figures.

Real average earnings among footwear employees rose rapidly in 1959 and '60, they then remained constant in 1961 and '62, and began to improve once more in 1963. Once again we see an example of capitalist firms behaving in the way predicted for labour-managers, i.e. increasing payments to labour in response to an improvement in profits.

Aggregate employment in the footwear industry continued to increase into 1961, even though trading conditions apparently reversed in this year, and all manufacturing suffered a drop in profits.

Unfortunately, information on employee strengths in the early sixties is only available for six firms in the footwear sample.

Their experiences support the aggregate picture. Five of the firms recorded an increase in employment in 1961. At the same time four out of the five experienced a drop in the nominal value of their profits. The fifth firm experienced a 10% increase in real profits. The sixth firm, which held its labour force constant between 1960 and 1961, increased its profits by more than 300%, even though its 1960 profits were fairly average.

All in all, the evidence suggests that the expansionary years of 1959 and 1960 mislead footwear firms into further expanding employment in 1961. This was a mistake, and, along with the worsening trading conditions, resulted in a heavy fall in profits.

We can now compare the behaviour of the footwear cooperatives over the same period. Information is available for ten cooperatives. All but one of these cooperatives employed less people in 1965 than in 1957. In other words, the cooperatives experienced the same general decline in employment as found throughout the industry over the same period. Even so, every cooperative increased employment in at least one of the years 1959 to 1961.

TABLE 4.11 CHANGES IN EMPLOYMENT IN FOOTWEAR COOPERATIVES 1957-65

| Year | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 |
|---|---|---|---|---|---|---|---|---|---|
| Increase in L | 4 | 1 | 5 | 7 | 6 | 4 | 3 | 4 | 3 |
| Constant L | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 |
| Decrease in L | 6 | 9 | 5 | 3 | 4 | 5 | 6 | 4 | 6 |
| Total Coops | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 9 | 9 |
| | Number of firms | | | | | | | | |
| Total employment in footwear (July) | 119.5 | 109.2 | 111.4 | 113.8 | 116.5 | 113.1 | 110.0 | 113.0 | 107.1 |
| | Thousands | | | | | | | | |

Source: Dept. of Employment Gazette

It is clear from Table 4.11 that the trend of employment among the cooperatives was very similar to that of capitalist firms. All but one of the cooperatives cut back employment in 1958, a year which saw a fall in real profits throughout the industry. By 1960, however, seven of the ten cooperatives were expanding their labour force. After 1962 the position began to reverse, with the majority of the cooperatives reducing employment.

Only two out of the ten cooperatives reduced employment in both 1960 and 1961. Were these two behaving as expected of pure income maximizing labour managed firms? In both cases the real value of income per worker (profits plus wages) were higher in 1960 and '61 than in 1959, while average earnings also increased more than the average for the industry. Two out of ten cooperatives may, therefore, have restricted growth in employment in order to enjoy an improvement in income per worker. We also saw, however, that one out of six capitalist firms also chose to hold back employment while enjoying a massive improvement in profits. Overall, there appears very little difference between the two groups.

## 10. Long-Run Behaviour in the Footwear Industry

We saw in Section 4 that 1976 marked the end of a long period of declining profitability for the British footwear industry, (although there had been a short lived improvement in 1972/73). We will, therefore, compare firms in 1976 with their position in 1969 (the earliest year for which data was available for most firms). The I.C.C. series did not report information on capital until 1971, and so for this group the comparison is confined to 1971 and '76.

Some firms began to respond to the short-term improvement in demand as early as 1976, although as we saw earlier, expansion did not usually begin until 1977. In order to check whether this early expansion may have influenced the 1976 results, 1975 figures will also be reported.

The first hurdle met when estimating K/L ratios is the question of what measure should be used for capital. Accounting measures of fixed capital are notoriously inaccurate. The "value" placed on an asset depends on the method and rate of depreciation used. Once an asset is fully depreciated its written down value will be zero, although it may still be productive. Assets are also valued at historic cost, i.e. the price at which they were purchased. Consequently, the higher the rate of inflation the more their value will appear to fall.

Four measures of fixed assets were used: (i) Total fixed assets not depreciated (FA); (ii) Total fixed assets depreciated (FA-d); (iii) Plant, machinery and vehicles not depreciated (PMV); (iv) Plant, machinery and vehicles depreciated (PMV-d). Both F.A. and P.M.V. were tried because the stated value of land and buildings can be exceptionally inaccurate. Land and buildings tend to last much longer than other fixed assets, while the application of depreciation may not reflect any decrease in their real value. Consequently the historic cost of land and buildings is likely to bear no relation to its true value. Furthermore, some firms rent land and buildings. This may make them appear far less capital intensive than firms which own their premises. Machinery may also be rented, but not usually on such a large scale.

In a few cases firms revalued fixed assets over the period studied. In this case earlier measures of capital were adjusted using the measure employed in later years.

An alternative measure of capital which is frequently used is "net assets" or "capital employed", i.e. the sum of nominal capital, reserves and long-term loans. In theory this long-term capital is used to purchase fixed assets, whereas current liabilities are used to pay for the day to day running of the firm. Capital employed may therefore be a better measure than fixed assets of the capital used by the firm.

Table 4.12 indicates the correlation between the measures of fixed assets and capital employed for both cooperatives and capitalist firms.

TABLE 4.12 CORRELATING FIXED ASSETS AND CAPITAL EMPLOYED

| Measure of fixed Assets | Correlation Coefficient between Capital Employed | | | | | |
|---|---|---|---|---|---|---|
| | 1973 | | | 1978 | | |
| | CPF Coops (All)* | Original CF (Footwear) | ICC CF (Footwear) | CPF Coops (All*) | Original CF (Footwear) | ICC CF (Footwear) |
| 1. FA | 0.284 | 0.933 | - | 0.829 | 0.859 | - |
| 2. FA-d | -0.161 | 0.909 | 0.412 | 0.950 | 0.780 | 0.681 |
| 3. PMV | 0.322 | 0.886 | - | 0.802 | 0.820 | - |
| 4. PMV-d | -0.248 | 0.761 | - | 0.814 | 0.735 | - |

* All coops were used as very few footwear coops survived into the '70s.

The original sample of capitalist firms do show a good correlation between capital employed and the various measures of fixed assets. The undepreciated value of total fixed assets displays the best correlation.

The cooperatives show a similar level of correlation in 1978, but a very poor rate in 1973. The explanation is straightforward. The sample of cooperatives in 1973 contained enterprises which had been making a loss for some years and were on the point of closure. In some cases shareholders funds (nominal capital plus reserves) were actually negative. The 1978 results were only for those cooperatives which survived the decade. It is these cooperatives which will be studied in this section.

The 1973 results for the cooperatives illustrate how sensitive "capital employed" may be to profits earned. This implies that capital intensity may well reflect the profits earned by the firm (and therefore the internal funds available). The neoclassical model avoids this obstacle by assuming that all capital is externally financed. It could still be argued, however, that even if firms are restricted by their profits when deciding on the desired level of capital, that their capital/labour ratio would not be so affected. This would be because they would adjust labour downwards in line with capital availability.

The ICC footwear firms show a poor correlation between fixed assets and capital employed. It is open to question which measure better reflects real capital use. Unfortunately, because the I.C.C. did not report the value of fixed assets before 1973, we will have to rely on measures of capital employed.

Table 4.13 reports the 1975 and '76 capital/labour ratios as

a proportion of the 1969 K/L ratios for 16 footwear firms from the original sample of C.F.'s. Whatever measure of capital is used, it is clear that the 16 firms pursued diverging paths. For this reason both the minimum and maximum results were reported as well as the average. The median result has also been included.

Nearly all of the firms show an increase in the capital/labour ratio in later years, whatever the measure used. This was a consequence of inflation, and undoubtedly many would have shown a fall in the K/L ratio if the measure of capital had been adjusted to 1971 prices.

The ratio using capital employed as a measure of capital was, on average, lower than measures using fixed assets, although the average result using FA-d was very similar. This, in fact, is just what we would expect. In theory capital employed should reflect the written down value of all fixed assets, i.e. FA-d.

Table 4.14 reports the 1975 and '76 capital/labour ratios as a proportion of the 1971 K/L ratio for the sample of ICC footwear firms. In this case only capital employed was used as a measure of capital, as data for fixed assets was not available in 1971. The ICC firms, like the original sample of footwear firms, displayed a wide variety of fortunes.

Table 4.14 reports the ratios for the four footwear cooperatives which survived through the 1970's. It is apparent that the cooperatives show no consistent difference from the capitalist firms. Nearly all the results lie within the range reported for the C.F.'s. (The numbers were too small to test whether there was any statistical difference).

COMPARING CAPITAL/LABOUR RATIOS BETWEEN TWO YEARS

TABLE 4.13 ORIGINAL SAMPLE OF FOOTWEAR CAPITALIST FIRMS (K/L)RATIO 1975 OR'76 DIVIDED BY (K/L) RATIO 1969

| Measure of K | 1975/69 | | | | | 1976/69 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | CE | FA | FA-d | PMV | PMV-d | CE | FA | FA-d | PMV | PMV-d |
| Max. | 2.34 | 3.50 | 3.02 | 3.95 | 5.38 | 2.35 | 3.41 | 3.87 | 3.86 | 6.17 |
| Min. | 0.72 | 0.94 | 0.86 | 0.90 | 0.81 | 0.68 | 0.93 | 0.91 | 0.89 | 0.82 |
| Ave. | 1.51 | 1.55 | 1.51 | 1.74 | 2.38 | 1.61 | 1.66 | 1.63 | 1.86 | 2.60 |
| Median | 1.45 | 1.43 | 1.36 | 1.58 | 2.02 | 1.70 | 1.56 | 1.43 | 1.74 | 2.12 |

Number of observations = 16

TABLE 4.14 I.C.C. SAMPLE OF FOOTWEAR CAPITALIST FIRMS

(K/L) RATIO 1975 OR 76 DIVIDED BY (K/L) RATIO 1971

| | 1975/71 | 1976/71 |
|---|---|---|
| Measure of K | CE | CE |
| Max. | 2.22 | 2.79 |
| Min. | 0.94 | 0.84 |
| Ave. | 1.59 | 1.63 |
| Median | 1.56 | 1.61 |

Number of observations = 8 ('75) and 9 ('76)

TABLE 4.15 FOOTWEAR COOPERATIVES #

| | 1975/69 | | | | | 1976/69 | | | | | 1975/71 | | | 1976/71 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CE | FA | FA-d | PMV | PMV-d | CE | FA | FA-d | PMV | PMV-d | CE | FA | FA-d | CE | FA | FA-d |
| Equity | 2.17 | 1.24 | - | 1.41 | - | 2.77 | 1.23 | - | 1.42 | - | 1.98 | 1.15 | - | 2.52 | 1.15 | - |
| Avalon | 1.42 | - | 1.07 | - | 1.11 | 1.52 | - | 1.18 | - | 1.33 | 1.26 | - | 0.96 | 1.35 | - | 1.06 |
| N.P.S. | 2.43 | - | 1.26 | - | 1.65 | - | - | - | - | - | 1.93 | - | 1.25 | - | - | - |
| St. Crispin | 1.34 | 1.89* | 2.48* | 2.15* | 5.44* | 1.40 | 1.83* | 2.20* | 2.09* | 4.52* | 1.19 | 1.64 | 1.89 | 1.24 | 1.59 | 1.69 |

*Both fixed assets and depreciation were revalued in 1971. #Some results are missing because one coop fully depreciated all assets on acquisition, i.e. FA-d = PMV-d = 0. While another coop did not record fixed assets and depreciation separately. Consequently only FA-d and PMV-d are known.

The PMV-d result for St. Crispin was very high for both 1975/69 and 1976/69, but the other measures used for capital were well within the C.F. range. This suggests that, although some adjustment was made to the St. Crispin data to allow for re-valuation of assets in 1971, that this adjustment was not satisfactory for the PMV-d ratios.

The change in the N.P.S. capital employed ratio between 75 and 69 was higher than that recorded for any capitalist firm, although the change in other measures of fixed assets was below the average for C.F.'s.

If anything then, the CPF cooperatives might have shown a tendency to increase their K/L ratios more than the C.F.'s. This is exactly the opposite result to that predicted by neoclassical theory. The fall in profitability would have led us to expect the coops to increase their K/L ratios less than the C.F.'s.

On the whole, however, the data suggests that the experience of the footwear coops was as diverse as that of the footwear C.F.'s, but that their behaviour was not consistently different from that of the capitalist firms.

## 11. Short-Run Behaviour in Clothing and Printing

It has proved far more difficult to identify short-run, or sudden, shifts in demand in the clothing and printing industries. There are two reasons, first the absence of information on individual capitalist firms, and second the much greater diversity within these industries as compared with footwear manufacture.

It was not possible to obtain data on employee strength for the sample of clothing and printing firms. These firms were small enough to be exempt from declaring the size of their workforce even after the 1967 Act. Unfortunately the ICC Business Ratio Series covering Printers did not begin until 1977. The ICC Reports do go back further for clothing manufacturers. However, different sectors of the clothing industry experienced quite different conditions during the 1970's, and it was impossible to pick out any one year when a majority of the ICC sample increased or decreased their workforce.

The clothing industry is far less homogeneous than footwear. Firms tend to be smaller but are far more numerous. As with footwear, the industry experienced a massive decline in its workforce between 1950 and 1978. Not all sectors, however, suffered the same set-backs. A noticeable exception is the Standard Industrial Classification (SIC) No. 4450, "Dresses, Lingerie and Infants Wear" which increased its workforce by 7.5% between 1968 and 1978.[8] Even so, average employment per enterprise in this sector fell from 45.4 to 31.8 over the same period.

The printing industry has remained far more buoyant than clothing or footwear. General Printers and Publishers (SIC 489) managed to maintain a fairly stable workforce until the early seventies. Since then there has been a significant drop in employment, which fell by 14% between 1970 and '78.[9] The average enterprise workforce had, however, been declining over a much longer period. In 1958 each enterprise employed an average of 30.8 workers, by 1978 the figure was 19.3.[10] Total employment in the industry was maintained by a steady increase in the number of printing firms.

For both industries, therefore, there has been a general decline in the average employment per enterprise. But for both groups one period stands out against this trend.

TABLE 4.16 EMPLOYMENT AND PROFITABILITY IN CLOTHING AND PRINTING

Employment in thousands

| YEAR | 66 | 67 | 68 | 69 | 70 |
|---|---|---|---|---|---|
| Clothing [a] | | | | | |
| Total employment | 417 | 392 | 384 | 389 | 380 |
| Index of Real profits [c] | 77.6 | 72.5 | 72.3 | 66.6 | 65.4 |
| Printing [b] | | | | | |
| Total employment | 651 | 640 | 642 | 649 | 655 |
| Index of Real profits | 99.6 | 104.7 | 117.3 | 103.1 | 103.3 |

Sources: Employment from the Department of Employment Gazette, June of each year.

Profits were taken from the Annual Abstract of Statistics and deflated by the R.P.I.

a. "Clothing" = all SIC categories under "Clothing & Footwear" excluding footwear.

b. "Printing" = SIC category "Paper, Printing & Publishing".

c. Real profits are for both clothing and footwear.

We can see from Table 4.16 that both industries suffered a fall in employment from 1966 to '67. After this the printing industry (including General Printing and Publishing) picked up and increased its workforce in 1968, '69 and '70. After that employment fell back. The largest increase in the workforce was in 1969, one year after the peak in real profitability.

The clothing industry also managed to reverse the rapid decline in its workforce in 1969, although real profits never recovered. They did, however, remain almost constant between 1967 and '68. 1968 was a year which saw a peak in the real profits of all manufacturers, and appears to have stimulated expansion among both clothing and printing firms.

Let us now compare the clothing and printing cooperatives over the same period. Data is available for two clothing cooperatives. Ideal Clothiers had seen a continuous decline in its workforce since 1960. 1969 was the first year in which it recorded an increase in employment. Queen Eleanor, which operates in the Dress, Lingerie and Infants Wear Sector, had, as expected, not endured the contraction suffered by Ideal Clothiers (Mens Outfitters). Employment fell back heavily in 1967, however, and then by a smaller amount in 1968. 1969 reversed this trend, with the workforce rising by 21 to 182. It then fell back again in 1970. Clearly both cooperatives responded to the late sixties boom in the market in exactly the same way as their capitalist counterparts.

Data is available for seven printing cooperatives over the same period. All of these suffered a fall in their workforce between 1965 and 1975. Four of the coops, however, increased employment in either 1968, '69 or '70. These cooperatives, then, behaved as expected of capitalist firms. What of the remaining three firms, were they behaving as income maximizers?

One, Gloucester Printers, made a loss from 1967 until 1969, and again in 1971 when it was dissolved. The earnings of the workforce, as a percentage of the average among general printers, also declined. The failure of Gloucester Printers to expand during this period was

apparently due to its own particular difficulties rather than to income maximizing policies.

A similar picture emerges from Bristol Printers. After a good year in 1967, the profits fell away in 1968. From 1969 until its dissolution in 1977, the cooperative made a loss in every year except 1970. Average earnings fell as a percentage of the national average in both 1968 and 1969, although had recovered to their 1967 level by 1970. The real income per worker (earnings plus share of profits), rose slightly in 1968 but fell below the '67 level in 1969.

This leaves Hull Printers, which, after a bad year in 1967, managed to sustain its profits at a little below the 1966 figure between 1968 and 1970. Both earnings as a percent of the national average, and real income per worker increased in 1968 and 1970, when labour was reduced. This then could be seen as an example of income maximization, although in 1969 both workers' relative earnings and their real income fell back while the workforce remained constant.

Out of nine cooperatives working in printing and clothing, only one displayed a possible perverse short-run response. Once again, the evidence does not support the neoclassical predictions.

## 12. Alternative Explanations of Short-Run Behaviour

There have been many attempts to explain away the predicted short-run perversity of L.M.F.'s while retaining a neoclassical framework. These were described in Chapter 1. They may be summarised as follows:

TABLE 4.17 REMOVING SHORT-RUN PERVERSITY IN THE L.M.F.

| Explanation of Rise in Demand | | ΔX | ΔL | Δh | ΔY |
|---|---|---|---|---|---|
| 1. Fixed L (no variable inputs) | | 0 | 0 | 0 | ↑ |
| 2. Fixed L (other variable inputs) | | ↑ | 0 | 0 | ↑ |
| 3. Variable L + other variable inputs | | ? | ↓ | 0 | ↑ |
| 4. Utility function with Y & h | +ve S.S.L | ↑ | 0 | ↑ | ↑ |
| Supply schedule of L (S.S.L.) | -ve S.S.L. | ↓ | 0 | ↓ | ? |
| 5. Inegalitarian Cooperative | | ↑ | ↑ | 0 | ↑ |
| 6. Hiring of non-members | | ↑ | ↑ | 0 | ↑ |
| 7. Wage Adjustment with w adjusting more slowly than L | | ↑ | ↑ | ↑ | ? |
| 8. Imperfect Competition | | ? | ? | 0 | ↑ |

ΔX = change in output

ΔL = change in labour

Δh = change in hours

ΔY = change in real income per worker.

Most of the explanations outlined in Table 4.17 show no change in the hours per worker. This is not to say that we might not expect hours to change, but that such a change is not essential to explaining away the perverse short-run predictions.

The authors who developed these alternative models were concerned to eliminate predictions of a negative supply curve among L.M.F.'s. Very few of the models predict that the labour force would expand with a rise in demand, as we would expect of capitalist firms. The

most frequent assumption is that the labour force will be held constant.

The evidence from the C.P.F. cooperatives suggests that fixed membership is inadequate to explain their short-run behaviour. By far the majority of the cooperatives responded just like C.F.'s and expanded their labour force when trading conditions improved. The second most frequent response was to continue to reduce the workforce. Usually this went hand in hand with a continuous loss on trading.

Only two cooperatives showed any sign of maintaining a stable workforce. These were N.P.S. shoes and St. Crispin in 1977 and '78. We can see from Table 4.17 that all but one of the models which hold L fixed would predict an increase in income per worker as a consequence of a rise in demand. Did this occur in N.P.S. and St. Crispin?

N.P.S. in fact suffered a sharp fall in the average take home pay (wages and bonus) of workers between 1975 and '78. The index of real average earnings fell from 3.95 in 1975 to 3.68 in 1977 and 3.86 in 1978. Earnings were 81.5% of the national average in 1975 but fell to 78.3% in '77 and 78.5% in 1978. Although real profits improved considerably in 1977 and '78 this was not sufficient to compensate for the drop in real earnings, so that the R.P.S. per worker also fell after 1975.

Earnings in St. Crispin remained almost constant as a percent of the national average between 1976 and 1978, although they were down on the 1975 figure. The R.P.S. per worker did show an improvement in both years, even when measured as a percent of average earnings in footwear.

Neither cooperative, therefore, lends a lot of support to the fixed labour models. In both cases, although profits rose, take home

pay did not. These models would only apply if workers were more concerned about their share of the R.P.S. than their take home pay. Even if this were true, only St. Crispin would fit the evidence.

One model was described in Table 4.17 in which workers income, Y, might not increase, with a rise in demand while labour remains constant. This was the example of a negative supply schedule of labour. In this case we would always expect earnings per hour to rise. As a consequence members would reduce the hours worked. In theory it is possible that they would reduce the hours enough to produce a drop in total income. In practice this is highly unlikely, and can probably be ruled out.

If neoclassical models of the short-run behaviour of the L.M.F. are to have any credibility in describing the behaviour of the C.P.F. cooperatives, then they must explain why most cooperatives expanded their workforce at the same time as capitalist firms. Table 4.17 describes three models which may satisfy this criterion. We will consider each in turn.

One explanation of C.P.F. behaviour might be that they hired non-members in expansionary phases, paying them a fixed wage. C.P.F. cooperatives do employ non-members. This process will be described in more detail in Chapter 5. This model assumes that the distribution of any surplus after payment of wages is only shared among members. This is not true of the C.P.F. cooperatives which pay a bonus to all workers. The only income received by members as opposed to non-members is the interest on share capital. British law requires, however, that cooperatives pay a fixed interest on share capital. Consequently members' earnings from the share dividend is unrelated

to the profits earned by the cooperative. Furthermore, CPF members' earnings from share dividends formed an insignificant portion of their annual income (rarely more than 1%). We must conclude that the use of hired labour by C.P.F. cooperatives cannot explain their short-run behaviour.

Another explanation is that C.P.F. cooperatives are inegalitarian. That is that they recruit new members at lower wage rates than found among existing members. This is then justified by arguing that old members have longer service, more experience, are more skilled, etc. Undoubtedly C.P.F. cooperatives are inegalitarian. To show that this might explain the C.P.F. cooperatives' behaviour we would need to show that new workers were recruited at rates below that of existing members. Unfortunately we do not have information on this, and must leave this as a possible explanation of C.P.F. short-run behaviour.

Next we come to wage adjustment theories. Horvat claimed that Yugoslav firms set wages at the beginning of the period, and then adjust labour so as to maximize profits. That is, the Yugoslav firm will behave just like the C.F. in the short-run. Vanek and Miovic argue that, if in each period wages are adjusted until all undistributed surplus disappears, then the short-run perverse behaviour could still appear. The question becomes empirical. Which adjusts more rapidly, labour or wages?

In this model we must look for a divergence between workers' wages and their "income". Their "income" might be thought of as their wages plus end of year bonus, or alternatively as R.P.S. per worker. We can now look again at those cooperatives which expanded

their labour force at the same time as capitalist firms in their industry. How did average wages, average earnings (wages + bonus) and R.P.S. per worker behave? Table 4.18 describes what happened to cooperatives which increased their labour force during periods of expansion in their industry.

TABLE 4.18 WAGE ADJUSTMENT AMONG COOPERATIVES

| | Number |
|---|---|
| Number of Coops which increased L once | 10 |
| Number of Coops for which (W+B)/W increased same year | 1 |
| Number of Coops for which R.P.S./W increased same year | 3 |
| Number of Coops which increased L two years running | 8 |
| Number in which (W+B)/W increased both years | 0 |
| Number in which R.P.S./W increased both years | 3 |
| Number in which (W+B)/W increased one year | 5 |
| Number in which R.P.S./W increased one year | 7 |

W = annual wage bill. B = annual bonus.

If the slow wage adjustment theory is correct then we would expect wages to fall as a proportion of "income", i.e. wages plus bonus or wages plus profits (= R.P.S.).

There are 18 examples of cooperatives which expanded their work-force at the same time as capitalist firms. Ten of these increased labour in one year only. Eight coops increased labour for two consecutive years.

We can see from Table 4.18 that wages kept up well with the total take-home pay (wages + bonus) in the years concerned. There

were 26 examples of cooperatives increasing labour (10 coops for one year and eight coops for two years). Out of this there were only six examples in which the bonus increased more than wages.

Wages lagged behind the R.P.S. more frequently. In thirteen out of the twenty-six cases the R.P.S. increased as a proportion of the wage bill.

It is possible, therefore, that the fact that wages adjust more slowly than labour to changes in profitability is one explanation of why cooperatives may behave like capitalist firms. Even so, this would only serve to explain half of the examples described in Table 4.18.

Finally we come to imperfect competition. The three industries that we have described here are probably some of the most competitive manufacturing industries in Britain. Each industry has its giants, but there are also a large number of small and medium sized firms in the field. It is true, however, that footwear firms face a high degree of monopoly in the wholesale market (see Chapter 7). There can be little doubt that all the cooperatives face some degree of imperfection in the market, so that we cannot rule this out as an explanation of the cooperatives' behaviour. Imperfect competition would, however, only serve as an explanation in the rare occasions when the rise in demand induced a rise in the elasticity of demand sufficient to induce the cooperative to expand the workforce. It would seem inadequate, then, to explain the preponderance of cooperatives which conformed to capitalist behaviour in fairly competitive industries.

## 13. Conclusion

We have seen that the majority of the C.P.F. cooperatives did not behave as predicted by the neoclassical theory of the L.M.F. in the short-run. Furthermore, very few capitalist firms conformed to the neoclassical model of an exogenous wage rate.

The existing explanations of why the predicted short-run behaviour of the L.M.F. might not occur have not been very successful in explaining the behaviour of the C.P.F. cooperatives.

The slow wage adjustment theory may give a partial explanation. It is also feasible that the cooperatives use of an inegalitarian system of wage payments was also effective.

It could be argued that the C.P.F. cooperatives are so undemocratic that the behaviour of the cooperative is entirely determined by a small group of managers. If this is true, would we expect the managers' objectives to be different from that of other workers? If managers' income is related to the average income per worker this would lead us to expect managers to pursue the same goal of income maximization.

Managerial theories of capitalist firms have suggested that management may wish to maximize sales or workforce. This would help to explain why cooperatives expanded along with other C.F.'s, but it does not accord with the steady run down of the workforce of most of the cooperatives since 1950.

Profit maximization is the objective which would best fit the short-run behaviour of most of the C.P.F. cooperatives. Is it possible

that undemocratic cooperative managers simply pursued maximum profits The problem here is to explain why managers might pursue this goal rather than income maximization. This would suggest that managers' income is directly related to total profits rather than income per worker. It is difficult to explain why this should hold true.

Alternatively, it might be that managers are large shareholders and their earnings from share dividends might be more important to them than their salaries. British cooperative law rules out this explanation. The maximum shares which any individual may hold is £5,000, while share interest is fixed and unrelated to profitability.

Members from outside the cooperative usually sit on its management committee (usually representatives from other cooperative societies or trade unions). These members represent the institutional shareholders. Just like other shareholders, their earnings from share interest is fixed and unrelated to profits. Once again, it is difficult to understand why they might set the cooperative on a path of ruthless profit maximizing.

To conclude, the data presented in this chapter is insufficient to prove or disprove anything. The results do not, however, lend any support to the neoclassical theory of the L.M.F. It will be argued in Chapters 7 and 8 that the failure of neoclassical theory to explain the behaviour of cooperatives working within capitalism is because of its failure to take account of the dominant forces acting on firms working within capitalism today. The Neo-Ricardian model described in Chapter 9 also misses out many of these forces. It will be suggested, however, that the latter model is much more adaptable to realistic conditions than is the neoclassical system.

FOOTNOTES TO CHAPTER 4

1. JONES, D.C. & BACKUS, D.K. (1977) "British Producer Cooperatives in the Footwear Industry", Economic Journal, Vol. 87.

2. MARTIN, W.E. & O'CONNOR, M. (1981) "Profitability: A Background Paper" in MARTIN, W.E. (ed). "The Economics of the Profit Crisis", Department of Industry.

3. DEPARTMENT OF INDUSTRY (1977) "Footwear Industry Study Steering Group Report."

4. DEPARTMENT OF INDUSTRY (1977) As above.

5. BRITISH FOOTWEAR MANUFACTURERS FEDERATION. "Footwear Industry Statistical Review."

6. See (a) CENSUS OF PRODUCTION. Business Monitor "Footwear Manufacturers", (b) BRITISH FOOTWEAR MANUFACTURERS FEDERATION. As above.

7. GOODMAN, J.F.B. et al. (1977) "Rule Making and Industrial Peace - Industrial Relations in the Footwear Industry". Croom Helm.

8. CENSUS OF PRODUCTION.

9. CENSUS OF PRODUCTION.

10. CENSUS OF PRODUCTION.

# CHAPTER 5

## HAVE BRITISH COOPERATIVES FAILED?

Chapter 3 described the most commonly advanced theories of why cooperatives fail. In this chapter we ask whether, in fact, British cooperatives have "failed" any more frequently than capitalist firms. Evidence is drawn from the C.P.F. cooperatives and literature published on other British cooperatives. In the next chapter the C.P.F. cooperatives are examined for behaviour which might support the failure theories.

For some authors cooperative failure occurs when the enterprise ceases to trade. It is more usual, however, to describe failure in relative terms, i.e. in comparison with capitalist firms. It is surprising, then, that comparative studies are few and far between, especially for British cooperatives.[1] It is much easier to find descriptions of cooperative performance in isolation.[2]

The absence of comparative studies might be partly explained by the shortage of cooperatives, in Britain at least, which have been operating for more than ten years. In their first years both C.F.'s and coops are very fragile, and so to compare new coops with long-standing capitalist enterprises would be very misleading. This is why most comparative studies, including this thesis, have had to rely on data from the C.P.F. coops, even though these are far from many people's idea of the ideal coop.

Why not compare the failure rate of the many new coops formed over the last decade with capitalist firms of a similar age? This would be a very difficult task, because many capitalist firms will not register until after several years of operation. Often they will continue for some time

under the guise of self-employment, perhaps using casual labour. We have no way of knowing how many capitalist firms fail at this stage, but we can guess that the numbers are probably very high.

The nature of cooperatives is such that they will tend to register early in their formation in order to formalise rules about the division of profits, assets and liabilities. Registration is also necessary for access to the special funds earmarked for coops. The budding capitalist can acquire a bank loan as an individual. A group of people asking for a bank loan must make clear who is responsible for repayment. Registration under the I.P.S. rules is the usual method of doing so.

It is, therefore, misleading to compare the failure rate of new cooperatives with that recorded for capitalist firms. We must compare established coops and C.F.'s to reach any sensible conclusions.

Existing evidence does suggest that coops growing out of failed capitalist firms have not been a great success. It is open to dispute whether the poor performance of these cooperatives is a consequence of some inherent quality of coops. Certainly the cooperatives fared no worse than their capitalist predecessors, and it is not very enlightening to observe that cooperatives could not succeed in markets where C.F.'s also failed. "Defensive" cooperatives will not, therefore, be discussed in this chapter.

## 1. Comparing the Ages of Enterprises

However well a cooperative may perform, if it cannot maintain this performance over a respectable length of time, then it might be considered to have failed in all the objectives listed in Chapter 3.

Derek Jones compared the average age of producer cooperatives and small private firms in Britain in 1963. He concluded "that the average P.C. (producer cooperative) is an older enterprise than its private counterpart. It seems that P.C.'s have a greater ability to survive."[3] This conclusion is mistaken. The figures merely indicate that very few new cooperatives were formed between 1900 and 1963, and those that were, such as the Building Guilds in the 1920's, quickly disappeared.

All of Jones's sample of coops had been formed by the early 1900's. In 1963, however, 38.9% of private registered companies had been registered in the five previous years.[4] This level of company formation will make for a very low average age of companies.

Ironically, the wave of new cooperatives in the late seventies has reversed the situation. A glance at the Directory of Industrial and Service Cooperatives in 1980 shows that by far the majority of producer cooperatives are now less than five years old.[5]

Comparing ages is, therefore, a fairly useless exercise. What we must do is compare rates of survival of established capitalist and cooperative enterprises.

## 2. Survival Rates

TABLE 5.1 COMPARING THE SURVIVAL OF COOPERATIVES WITH SIMILAR CAPITALIST FIRMS.

| | COOPERATIVES | | | CAPITALIST FIRMS | | | |
|---|---|---|---|---|---|---|---|
| INDUSTRY | Sample | Alive 1979 | % Alive | Sample | Traced | Alive 1979 | Alive As % of Traced |
| Footwear | 15 | 4 | 26.7 | 120 | 118 | 64 | 54.2 |
| Printing | 10 | 4 | 40.0 | 80 | 74 | 41 | 55.4 |
| Clothing | 4 | 2 | 50.0 | 32 | 30 | 18 | 60.0 |
| Other | 3 | 2 | 66.7 | 25 | 22 | 17 | 77.3 |
| Total | 32 | 12 | 37.5 | 257 | 244 | 140 | 57.4 |

Table 5.1 compares the sample of cooperatives and C.F.'s which are described in Appendix 3. Although some of the capitalist companies could not be traced at the Registrar of Companies, they did appear in Stubbs 1980 Directory. We cannot, therefore, assume that all untraced firms have been dissolved. Consequently live capitalist firms as a percent of traced firms are used for comparison with the cooperative sample.

A glance at Table 5.1 would suggest that capitalist firms have been much more successful at surviving than coops in the same industry. It is interesting to observe, however, that the ranking of industries by rates of survival is exactly the same for P.C.'s and C.F.'s. This would suggest that the causes of cooperative failure are closely linked to problems within the industry, but that perhaps coops are more vulnerable than C.F.'s.

If we look at how capitalist firms have survived, a very different picture emerges. Table 5.2 describes the situation of capitalist firms in Sample One[6] which were still alive in 1979.

TABLE 5.2 STATUS OF SURVIVING CAPITALIST FIRMS IN 1979.

| | Footwear | | Printing | | Clothing | | Other | |
|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % |
| Corrected Sample 1[7] | 57 | 100 | 36 | 100 | 12 | 100 | 12 | 100 |
| Independent & trading in same business | 9 | 15.8 | 8 | 22.2 | 2* | 16.7 | 5 | 41.7 |
| Independent or changed business | 2 | 3.5 | 4 | 11.1 | | | | |
| Independent, dormant or in liquidation | 1 | 1.8 | 1 | 2.8 | 1 | 8.3 | | |
| Subsidiary, trading in same business | 11 | 19.3 | 3 | 8.3 | | | 4 | 33.3 |
| Subsidiary & changed business | 3 | 5.3 | 1 | 2.8 | | | | |
| Subsidiary, dormant | 3 | 5.3 | 3 | 8.3 | 4 | 33.3 | | |
| TOTAL LIVE | 29 | 50.9 | 20 | 55.6 | 7 | 58.3 | 9 | 75.0 |

*One re-registered as unlimited company.

If we compare line 2 of Table 5.2 with cooperatives in Table 5.1, we find that in every industry proportionately more cooperatives have managed to continue working as independent enterprises in the same business. In fact, all the coops which were still operating in 1979 had remained in the same line of business since 1950.

Seven of the first sample of capitalist firms were found to have been subsidiaries in 1950. Three of these were still trading in 1979, all in footwear. If we add these to the eight independent footwear C.F.'s still operating, the percent (21.1%) of the original sample is still far below the percent of surviving footwear cooperatives.

What happened to the other capitalist firms which were still registered in 1979? Twenty nine (45.3% of all live C.F.'s) were taken over between 1950 and 1979. Ten of these have since ceased trading, and are companies on paper only. Four changed the nature of their business following the take-over. One footwear company converted to a small wholesale company, marketing the products of the parent company. The other three companies turned into holding or investment companies. Essentially, they too were only paper companies.

This leaves 15 companies which were taken over, but continued to manufacture products. We can add these 15, plus the three companies which were subsidaries in 1950, to the independent companies which have remained in the same trade. Table 5.3 compares these figures with the coops.

TABLE 5.3 COMPARING COOPERATIVES AND CAPITALIST FIRMS STILL TRADING IN 1979.

| | Footwear | Printing | Clothing | Other | Total |
|---|---|---|---|---|---|
| % of coops trading in 1979 | 26.7 | 40.0 | 50.0 | 66.7 | 37.5 |
| % of C.F.'s trading in same business in 1979 | 35.1 | 30.5 | 16.7 | 75.0 | 35.9 |

Overall there is no difference between the survival rates of coops and capitalist firms, although in footwear coops have been slightly less hardy, while in printing, and particularly clothing, they have displayed a much greater staying power.

This is not the whole story, however. We must also ask if there is any difference between the decision to dissolve cooperatives and capitalist firms. All of the cooperatives which ceased trading ran into serious difficulties before closing their business . Of the 15 for which this information is known, six were wound-up by creditors, but most of those which wound-up voluntarily were in heavy debt by the end. Was the same true of C.F.'s?

Unfortunately the records of limited companies dissolved before 1961 have been destroyed, and so we know nothing about why these companies were dissolved. Table 5.4 describes the other dissolved companies in more detail:

TABLE 5.4 DISSOLVED CAPITALIST FIRMS

| | Foot-wear | Print-ing | Cloth-ing | Other |
|---|---|---|---|---|
| Dissolved before 1961 | 20 | 4 | 3 | 1 |
| Dissolved 1961 to '79 of which:- | 34 | 29 | 9 | 4 |
| a) Independent when dissolved (excl.(c)) | 17 | 24 | 7 | 3 |
| b) Taken over by company | 9 | 1 | 2 | 1 |
| c) Taken over by persons owning similar firms | 6 | 4 | 0 | 0 |
| Dissolved by:- | | | | |
| a) Voluntary winding-up | 23 | 15 | 6 | 3 |
| b) Receiver | 1 | 6 | 0 | 0 |
| c) Notice in London Gazette | 6 | 8 | 3 | 1 |
| d) Not known | 2 | 0 | 0 | 0 |
| No information on company | 2 | 0 | 0 | 0 |
| TOTAL DISSOLVED | 54 | 33 | 12 | 5 |

Twenty-three (31%) of the companies dissolved after 1960 were known to have been taken over by other companies, or persons owning similar business. Probably several more would have been found to fall into this latter group if the information had been available. Unfortunately company annual returns only require directors to state other directorships. Major shareholders who were not directors may have also held shares in related companies. Several more companies were already owned in 1950 by shareholders who had interests in related firms.

There was therefore certainly no more than fifty-one (68%) of companies dissolved after 1960 that were genuinely independent. Many of the firms taken over were dissolved for convenience. This does not

necessarily mean that they had ceased trading. Some may even continue in the same premises. In other cases the assets were split up and transferred to plants belonging to the parent company. We cannot assume that dissolution in these cases necessarily coincided with poor performance. Unfortunately, private companies were not required to return their accounts to Companies House until 1966. For many companies we must therefore rely on other performance indicators.

In Table 5.4 we see that only seven firms (9%) were forced to a creditors winding-up by the appointment of a receiver. This is a much smaller proportion than that found among coops. This suggests two possibilities: (a) Some C.F.'s ceased trading for reasons other than business failure, or (b) Because cooperates provide their members with wages as well as dividends, and because the share-out to members on dissolution would not be enough to retire on, then cooperatives will struggle on until forced to close.

Probably both of these explanations apply. Therefore we must assume that at least some capitalist firms which were dissolved might have continued trading if they had been cooperatives. This implies that success rates (rather than survival rates) were slightly higher among capitalist firms. However, we must also ask how these C.F.'s survived. 43% of companies still alive and trading in the same business in 1979 were subsidaries of other companies. Undoubtedly, CPF cooperatives have been far more successful than capitalist firms at surviving as independent enterprises. Unfortunately no other British coops have been operating long enough to provide evidence on survival rates.

3. Comparative Economic Performance

There have been several studies of the comparative economic performance of coops and capitalist firms. The measures of success are usually based on profitability, productivity and growth rates.

Fortunately Derek Jones has summarised much of this work and concludes that, "though comparison with capitalist firms are often difficult to draw, diverse indicators of "efficiency" reveal that many P.C.'s perform well.[8] Jones' conclusion is based mainly on the experience of cooperatives operating outside of Britain, in the U.S., Spain and Israel.

Jones notes that the best performers are the Mondragon Coops in Spain. A recent study by Thomas and Logan confirm that Mondragon cooperatives have performed just as well as other Spanish firms.[9] The success of Mondragon is well known, but evidence from other countries is more ambivalent, with British Cooperatives tending to fall to the bottom of the pile.

In the British case we run into a familiar problem. Jones is the only person to have conducted a truly comparative study, and this only considered the CPF coops. Jones compared various measures of rates of return on capital and labour productivity.[10] He concluded that the average performance of the P.C.'s was worse than C.F.'s, and deteriorating relative to C.F.'s over time. His latest measures were for 1968.

Jones compared cooperative statistics with published figures for British firms. He admits that in many cases the statistics used for comparison with the coops were so aggregated, that the conclusions were of doubtful validity. The study of labour productivity used figures

TABLE 5.5 MEAN BUSINESS RATIOS FOR FOOTWEAR FIRMS AND COOPERATIVES

| RATIO | 1968 | | | | | | 1977 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | All C.F. | All Coops | Live CF | Live Coops | Live & indepen-dent | Live Sub-sidaries | All C.F. | All Coops | Indepen-dent CF | Subsidary CF | Dunn & Bradstreet Small | Dunn & Bradstreet Medium |
| 1. Profit-ability % | 6.0(23) | -3.5(6) | 6.8(18) | 6.2(4) | 3.8(12) | 12.7(6) | 15.718) | 19.3(4) | 14.6(11) | 17.5(7) | 14.1 | 21.2 |
| 2. Profit-margin % | 2.3(23) | -2.2(6) | 2.8(18) | 3.1(4) | 1.3 (12) | 5.9 (6) | 5.3(18) | 9.2(4) | 5.0(11) | 5.6(7) | 4.0 | 7.4 |
| 3. Sharehol-ders Return % | -1.3(23)<br>5.2*(22) | -5.8(6) | 3.3(18)<br>12.0*(17) | 13.0(4) | - 4.2 (12)<br>8.5*(11) | 18.3 (6) | 30.6(18) | 28.5(4) | 25.1(11) | 39.4(7) | 21.7 | 36.4 |
| 4. Return on net cap-ital % | 1.6(23)<br>8.2*(22) | - | 3.0(18)<br>11.6*(17) | 10.0(4) | - 4.7 (12)<br>8.0*(11) | 18.3 (6) | 30.2(18) | 26.5(4) | 24.5(11) | 39.1(7) | 21.7 | 36.4 |
| 5. Sales per Employee £ | 2510(20) | - | 2789(16) | 2342(4) | 2622 (11) | 3156 (5) | 8270(16) | 8208(4) | 8247(10) | 8308(6) | NA | 7307 |

*Excluding one company with negative reserves
( ) Figures in brackets indicate number of firms or coops sampled.
NA: Sales for many small firms not available.
Sources: (i) CPF Cooperatives annual returns to the Cooperative Union & Registrar of Friendly Societies.
(ii) CF Annual returns to the Registrar of Companies
(iii) Dunn & Bradstreet, "Management Ratios", 1977 Footwear Manufacturers
"Small" firms are those with a turnover of less than £1m.
"Medium" firms had a turnover of £1m. to £5m.

for total manufacturing. Data on wages and profitability were usually broken down by industry, but took in all sizes of firms. Only one of the measures used for comparison, i.e. profits before tax over net assets, was available for small firms by industry.

Table 5.5 compares footwear coops with the sample of capitalist footwear firms which were still operating at the end of the 1960's. The five business ratios are those commonly used as measures of efficiency and productivity of companies. They were calculated as follows:

1. PROFITABILITY = (Profit before tax ÷ Total assets) x 100.
2. PROFIT MARGIN = (Profit before tax ÷ Turnover) x 100
3. SHAREHOLDERS RETURN = (Profit before tax ÷ (equity + reserves)) x 100.
4. RETURN ON NET CAPITAL = (Profit before tax ÷ (equity + reserves + long-term loans)) x 100.
5. SALES PER EMPLOYEE = Turnover ÷ Number of employees.

The figures in Table 5.5 must be treated with much caution. The samples are tiny. Secondly, profits were so volatile that only the fifth measure (sales per employee) had a standard deviation which was less than half of the estimated mean. In 1968 the standard deviations for the first four measures were more than the means. Except for measure 5, we cannot, therefore, draw any significant conclusions about differences between cooperative and C.F. performance.

A first glance at Table 5.5 suggests that in 1968 capitalist firms were doing far better than footwear cooperatives, but that by 1977 the situation had been partially reversed. This change in fortunes was not due to cooperatives whipping themselves into shape during

the 1970's, but because two cooperatives which suffered heavy losses in 1968 had disappeared by 1977. Five capitalist firms also ceased trading during the same period, but their poor performance in 1968 did not have such an effect on the average figures.

When we compare columns three and four (the performance in 1968 of coops and capitalist firms which were still alive in 1977), the difference between the two samples disappears.

It is a well known fact that the manipulation of transfer prices between parent companies and their subsidaries can have strange effects on declared profits and on the value of sales. Parent companies often transfer assets or reserves of subsidaries into their own accounts, and so the denominators used to calculate the first four ratios may also be unreliable. The figures for independent firms (some of which were consolidated accounts for parent companies) are therefore more likely to give an honest picture.

For all ratios, and in both years, the average results of independent firms were poorer than subsidaries (although only the figures for sales per employee in 1968 were significantly different). A comparison of "live" coops with independent capitalist firms shows cooperatives ahead in both years, except on productivity (sales per employee).

Sales per employee is not a good measure of labour productivity because, for example, a firm buying expensive leathers and selling high quality shoes would appear more productive than a firm operating at the cheaper end of the market, with low costs and low value of sales. A much better measure of productivity is value added per employee, but, unfortunately, value added could not be calculated from the figures

reported in firms' annual returns. The use of sales rather than value added may explain why coops in 1968 appeared to have lower productivity, but better rates of return than independent footwear firms.

The final two columns of Table 5.5 show the Dunn and Bradstreet estimates of the same five ratios for small and medium sized footwear manufacturers in 1977. All but one of the cooperatives fell into the small category, i.e. they had a turnover of less than £1 million in 1977. Ten of the capitalist firms were medium in size (sales between £1m. and £5m), the remaining eight had sales of less than £1m. It is reassuring to see that, although the sample of capitalist firms was small, the 1977 estimates fell between Dunn and Bradstreet's estimates for small and medium companies in every case.

If we compare coops in 1977 with Dunn and Bradstreet's results for small companies, cooperatives come out on top every time.

Unfortunately there is insufficient data to make any sensible comparison between CPF coops and capitalist firms operating outside of the footwear industry.

With such limited data we cannot draw any definite conclusions about the comparative economic performance of British coops and capitalist firms. The data does suggest, however, that at least some CPF coops have managed to perform as well as C.F.'s, even when applying capitalist measures of success.

## 4. Employment Creation

In recent years many people have turned to cooperatives in the hope that they might stem the rising tide of unemployment. There has been an explosion of local cooperative development groups and

of Local Authority funding for cooperative ventures. Even so, Wilson estimates that by 1980 British cooperatives (including CPF and ICOM) only constituted 0.1% of employment in the small business sector.[11]

There is some evidence to suggest that cooperatives may be coping better than the private sector in preserving jobs. In his survey of fifty-five British cooperatives Wilson found a 32% increase in employment between the time they were set-up and the end of 1980. At that time most of the coops were less than three years old. Over the three years 1977 to 1980, total employment in Britain fell by 0.5%, and in manufacturing industries by 7.6%.[12]

Unfortunately, Wilson's figures only refer to "surviving" coops, i.e. the ones that still existed when the questionnaire was sent out. We do not know how many coops collapsed over the same period, and so we cannot be certain that total cooperative employment has increased. Even if the number of jobs in cooperatives has grown in recent years, this may only reflect the growing popularity of the cooperative form. Perhaps capitalist firms working under the same conditions could have created more jobs.

We will get more idea of cooperatives' job creating capacity by comparing the change in employment of coops and similar capitalist firms. We begin by comparing the change in employment in the C.P.F. coops with levels of employment in their particular industries.

The majority of the cooperatives in the sample are working in what are traditionally considered to be declining industries, i.e. footwear and clothing. Certainly footwear manufacturing has seen a tremendous contraction since 1950, but we can see in Table 5.6

that this was not true of the clothing sectors in which the cooperatives operated.[13]

TABLE 5.6 INDEX OF EMPLOYMENT IN CLOTHING, FOOTWEAR & PRINTING 1950-78

| YEAR | Footwear Mfr. | | Clothing Mfr. | | Printing | |
|---|---|---|---|---|---|---|
| | Coops | All Firms | Coops | All Firms | Coops | All Firms |
| 1950 | 100 | 100 | 100 | 100 | 100 | 100 |
| 1958 | 73.0 | 89.5 | 53.8 | 102.3 | 81.0 | 98.6 |
| 1968 | 36.9 | 79.0 | 40.2 | 110.6 | 77.0 | 103.7 |
| 1978 | 25.6 | 61.2 | 23.2 | 92.7 | 32.9 | 91.5 |

Sources: (i) CPF Cooperatives Annual Returns

(ii) Census of Production.[14]

The cooperatives appear to have performed very badly compared with the rest of their industry, but we must remember that the index for all firms in Table 5.6 includes new firms created since 1950. New clothing and printing coops have been formed in recent years. If these were added in, cooperatives may not appear quite so unsuccessful.

To make a genuine comparison of employment creation in cooperatives and capitalist firms we must compare the same group of C.F.'s from 1950. Unfortunately prior to 1966 companies were not required to declare the size of their workforce in their annual returns, and since 1966 small firms (less than 100 employees) have still been exempt. The Northamptonshire and Leicester and County Footwear Manufacturers Associatic have, however, provided information on employee strength which may be used to supplement the annual returns.

Data is available for fifteen footwear firms in sample one which continued to trade between 1968 and 1978. In Table 5.7 they are compared with the four footwear cooperatives which continued to trade over the same period. Groups of companies often shift assets and jobs between subsidaries, and so changes in subsidary employment may not reflect total employment within the group. For this reason independent and subsidiary companies are also described separately in Table 5.7.

TABLE 5.7: INDEX OF TOTAL EMPLOYMENT WITHIN COOPS AND C.F.'s.

| YEAR | Footwear Coops | FOOTWEAR C.F's. | | |
|---|---|---|---|---|
| | | All | Indep. | Subsid. |
| 1968 | 100 | 100 | 100 | 100 |
| 1978 | 93.3 | 102.7 | 104.6 | 99.8 |

The figures in Table 5.7 also give the impression that cooperatives have been less successful than C.F.'s in maintaining jobs. In fact, the variance in the experience of individual firms is such that we cannot confirm that coops are less successful. The mean percentage change in employment of capitalist firms was 114.1%, and for coops 92.5%. These means were not significantly different at the 10% level.

With such a small sample it would in fact be difficult to find a significant difference. The size of the sample is, however, not the only reason for this result. Undoubtedly there has been a wide divergence in the experience of different enterprises. Seven of the fifteen capitalist firms suffered drops in employment over the decade while one of the four coops increased its labour force. Furthermore,

if one subsidiary which enjoyed more than a doubling of its workforce is excluded from the total for C.F.'s, then employment among the capitalist sample also fell between 1968 and 1978.

We must conclude, therefore, that the huge difference between cooperatives and C.F.'s in Table 5.6 was mainly due to the exclusion from the data of new cooperatives formed after 1968, but even if new cooperatives had been taken into account it is highly likely that coops would still have shown badly compared with C.F.'s. This would have been due to the low rate of formation of coops in these industries.

## 5. Democracy and Participation

There is another concept of cooperative failure, that of degeneration into capitalist style control or ownership. Once again the evidence is very sparse, and the majority of British coops have existed for too short a time to experience "degeneration".

The reassertion of traditional managerial roles in S.D.N. and Triumph Meriden are sometimes quoted as examples of this inevitable process. Here we run into the problem of distinguishing between a division of labour between production and management, and a difference in power between these two groups. Even where formally cooperative members maintain power over management, it is often argued that differential access to information puts most of the power into the hands of management. This is an issue which has been given much study by researchers into industrial democracy, and it will not be pursued here. In this section degeneration is measured purely in terms of members' formal decision making power, and the degree to which membership coincides with employees.

Derek Jones claims that the C.P.F. cooperatives have shown no tendency towards reduced democracy. He pointed out that in 1890 only an average of 34% of the Management Committees were employees. By 1948 this figure was 60%, although it has since declined.[15] The proportion of the membership that are employees remained fairly stable over the period 1948-70. The proportion of employees who are members declined from 63% to 53% over the same period. Even so, it seems true to say that the concept of inevitable degeneration appears a fallacy. Furthermore it should be realised that nearly all non-employee members are either ex-employees or other cooperative societies. Ex-employees are encouraged to retain their shares in order to prevent a flood of funds out of the coops. Coops differ from firms in that equity capital may be withdrawn, making coops vulnerable to a sudden liquidity problem.

The dynamics of employee membership have not been adequately explored for CPF coops. The rules of the majority of these coops require employees to become members. Membership is usually achieved by a proportion of each workers' bonus being retained until they own the necessary value of shares to qualify for membership. This can be as much as £300, although is often far less.

In recent years, when profits were poor, workers' bonuses have frequently not been paid. Consequently new employees have rarely achieved the level of shareholding necessary for membership. Thus, we cannot assume that a drop in employee membership is a sign of degeneration.

We can expect a regular turnover in cooperative workers. Given this, then the proportion of employee members might be expected to steadily decline unless regular workers' bonuses resulted in sufficient shareholdings. So we might predict a strong relationship between

the level of bonus per workers and the proportion of the workforce who are cooperative members.

The link is more complicated than this, however, because an increase in the workforce will suddenly increase the proportion of non-members. Since members will usually be the longest serving employees, they are the ones least likely to be laid off. A drop in the workforce will, therefore, probably see a rise in the proportion of employee members. Two examples are described in Table 5.8.

We can see in Table 5.8 that Equity Shoes maintained a very high level of membership among its employees. This was the result of a rule requiring employees to capitalize their bonus into shares, along with a regular bonus payment and a steadily declining workforce. Toytown Shoes had the same rule about capitalizing employees' bonus. Continuous non payment of this bonus resulted in a rapid decline in the percentage of workers who were members.

The examples shown in Table 5.9 are more complicated. Up to 1962 Nottingham Printers maintained a high level of employee membership by regular bonus payments, even though the workforce increased considerably between 1955 and 1961. No bonus was paid in 1963 or '64, but a drop in the workforce, and presumably no new workers employed, ensured that the percent of workers who were members remained very high. Once again, there were no bonus payments between 1966 and 1969. This resulted in a rapid decline in the percent of employees who were members. One year later (1970) a bonus was paid and level of employee membership began to rise. After three years of regular bonuses, the coop had reached 100% membership.

TABLE 5.8: CHANGING EMPLOYMENT AND MEMBERSHIP IN TWO FOOTWEAR COOPERATIVES

| Year | EQUITY SHOES | | | | TOWTOWN SHOES | | | |
|---|---|---|---|---|---|---|---|---|
| | Workers Bonus £ | Work-force | Member Workers | % Work-ers as members | Workers Bonus £ | Work-force | Member Workers | % Work-ers as members |
| 1950 | 7000 | 445 | 410 | 92.1 | 0 | 88 | 69 | 78.4 |
| 51 | 6650 | 399 | | | 0 | 90 | | |
| 52 | 2800 | 358 | | | 0 | 92 | | |
| 53 | 7175 | 380 | | | 0 | 94 | | |
| 54 | 6125 | 383 | | | 0 | 93 | | |
| 55 | 8400 | 398 | 380 | 95.5 | 0 | 95 | 55 | 57.9 |
| 56 | 8750 | 396 | | | 0 | 92 | | |
| 57 | 6650 | 354 | | | 0 | 80 | | |
| 58 | 7200 | 339 | | | 0 | 77 | | |
| 59 | 6000 | 317 | | | 0 | 75 | | |
| 60 | 9800 | 332 | 326 | 98.2 | 0 | 84 | 36 | 42.9 |
| 61 | 12496 | 345 | | | 0 | 91 | | |
| 62 | 3744 | 313 | | | 0 | 97 | | |
| 63 | 10720 | 277 | | | 0 | 90 | | |
| 64 | 10932 | 283 | | | 0 | 90 | | |
| 65 | 10500 | 272 | 246 | 90.4 | 0 | 75 | 15 | 20.0 |
| 66 | 10400 | 239 | 209 | 87.4 | 0 | 70 | 12 | 17.1 |
| 67 | 8520 | 217 | 198 | 91.2 | 0 | 64 | 10 | 15.6 |
| 68 | 12150 | 197 | 186 | 94.4 | 0 | na | na | na |
| 69 | 13050 | 190 | 172 | 90.5 | In liquidation | | | |
| 70 | 12650 | 196 | 189 | 96.4 | | | | |

N.B.: Information on membership was only available for 1950, '55, '60 and 1965 onwards.

TABLE 5.9 CHANGING EMPLOYMENT AND MEMBERSHIP IN TWO MORE FOOTWEAR COOPERATIVES.

| Year | NOTTINGHAM PRINTERS | | | | BIRMINGHAM PRINTERS | | | |
|---|---|---|---|---|---|---|---|---|
| | Workers Bonus £ | Work-force | Member Workers | % Work-ers as members | Workers Bonus £ | Work-force | Member Workers | % Work-ers as members |
| 1950 | 320 | 21 | 20 | 95.2 | 2950 | 100 | 69 | 69.0 |
| 51 | 526 | 21 | | | 3101 | 100 | | |
| 52 | 196 | 20 | | | 3302 | 102 | | |
| 53 | 139 | 20 | | | 3439 | 101 | | |
| 54 | 353 | 20 | | | 3767 | 104 | | |
| 55 | 230 | 21 | 19 | 90.5 | 3800 | 98 | 59 | 60.2 |
| 56 | 253 | 22 | | | 4214 | 102 | | |
| 57 | 635 | 23 | | | 4473 | 102 | | |
| 58 | 660 | 24 | | | 4719 | 103 | | |
| 59 | 813 | 27 | | | 4793 | 101 | | |
| 60 | 920 | 29 | 25. | 86.2 | 5760 | 104 | 52 | 50.0 |
| 61 | 543 | 29 | | | 5440 | 102 | | |
| 62 | 689 | 27 | | | 5656 | 101 | | |
| 63 | 0 | 27 | | | 5180 | 102 | | |
| 64 | 0 | 26 | | | 5164 | 94 | | |
| 65 | 170 | 26 | 25 | 96.1 | 4400 | 93 | 48 | 51.6 |
| 66 | 0 | 26 | 25 | 96.1 | 5440 | 91 | 46 | 50.5 |
| 67 | 0 | 22 | 15 | 68.2 | 4900 | 91 | 44 | 48.4 |
| 68 | 0 | 18 | 13 | 72.2 | 0 | 95 | 44 | 46.3 |
| 69 | 0 | 19 | 13 | 68.4 | 840 | 89 | 35 | 39.3 |
| 70 | 320 | 19 | 11 | 57.9 | 0 | 86 | 33 | 38.4 |
| 71 | 1230 | 20 | 18 | 90.0 | Dissolved | | | |
| 72 | 910 | 19 | 19 | 100 | | | | |

Birmingham Printers stands out as the exception. Although bonuses were paid to workers every year up to 1967, and the workforce was reduced, the level of membership among employees steadily declined. The explanation lies with the rules of the cooperative. The rules did not require the capitalization of workers bonuses, and merely noted that workers would be eligible for membership after two years of employment.

It could be argued that the direction of causation is not from workers' bonus to employee membership, but in the opposite direction, i.e. high employee membership results in pressure for workers' bonuses to be paid. There is, however, a strong correlation ($r = 0.876$ for all coops) between the level of profits and the bonus paid to workers. This would indicate that the direction of causation is from good profits, to payment of a bonus, to a boost in membership among workers. We can also see that the Nottingham Printers and Toytown Shoes stopped paying a bonus when employee membership was high. It was only after the end of the bonus that membership declined.

The evidence in this section must lead us to doubt the validity of Jones' use of employee membership figures as a sign of democracy within the CPF coops. Most of the cooperatives have rules which require employees to apply for membership. In the case of Birmingham Printers, where employee membership was voluntary, most workers apparently chose not to do so. The implication is that workers in other coops became members through coercion rather than any desire for participation. It is dangerous, however, to generalise from the experience of the Birmingham Printers, because such a cooperative, which chose not to require membership of its employees may have actively discouraged membership.

We must also avoid concluding that rules requiring employees to become members are a sign of the cooperatives' commitment to industrial democracy. These rules are often a means of raising capital for the coop. This is one reason why employees are often required to allocate their bonus for the purchase of shares up to values well above the amount necessary for normal membership. In 1975, loans from members also formed 82.5% of cooperatives long-term borrowing (see table 6.1, Chapter 6).

Clearly, the evidence available in the CPF cooperatives' annual returns is totally inadequate to assess the degree of democracy or workers' participation in these coops. This can only be discovered by close observation of individual coops, which is a task beyond the limits of this thesis. It does seem fair to conclude, however, that complete degeneration into a virtual capitalist firm, with a few members employing a majority of non-members, is not at all inevitable.

## 6. Retrieving the Surplus taken by Capital

One of the driving forces behind the founding of retail coops in Britain was to break the monopoly of capitalists, and to make goods available to members at a reasonable price. For the producer cooperatives, recovering the surplus expropriated by capital in the form of higher labour incomes, was also important. However, improving working conditions, and giving control to workers, were other principles which were basic to the early producer cooperatives.

In recent years, perhaps because of the much improved standard of living in Britain, this issue has faded from cooperative discussion. Indeed, it is well known that many so-called alternative coops earn

abysmal incomes almost as a matter of principle. But if coops are to be anything more than a home for friends of the earth, then they must at least be able to provide their members with an income comparable to, if not better, than employees of capitalist firms.

Although there is a general impression that the cooperatives pay low wages, it is often forgotten that many of the newer cooperatives operate in sectors, such as retailing, where wages are generally very low. As usual, there has been no systematic comparison of wages in modern coops and similar private firms. Secondly, when a cooperative has only been operating for a few years, much of its revenue must be recycled into capital accumulation, and wages will inevitably be low initially. Perhaps in twenty years time some of the new coops will be reaping the return of today's accumulation, and enjoying exceptionally high incomes.

In the meantime, this leaves us, as always, with the CPF coops as the only established coops in Britain which might be used for any sensible comparison.

Not surprisingly, Derek Jones made exactly this comparison.[16] He compared the average weekly remuneration per worker in the CPF coops with industry figures published by the Department of Employment and found that capitalist firms performed consistently better than coops.

Tables 5.10 to 5.12 support Jones' finding that cooperative wages are below the national average in printing and footwear firms. In recent years, however, the two surviving clothing coops appear to have been doing better than average.

TABLE 5.10: FOOTWEAR, AVERAGE ANNUAL WAGE BILL PER EMPLOYEE

| Year | Coops | Census of Production | Coops with Bonus | Capitalist firms |
|---|---|---|---|---|
| 1967 | 727(7) | - | 738(7) | 727(5) |
| 1968 | 785(4) | 811 | 810(4) | 830(9) |
| 1969 | 871(4) | - | 898(4) | 923(8) |
| 1970 | 906(3) | 961 | 935(3) | 904(5) |
| 1971 | 1052(3) | 1062 | 1095(3) | 1023(6) |
| 1972 | 1167(3) | 1157 | 1206(3) | 1186(6) |
| 1973 | 1285(3) | 1354 | 1328(3) | 1248(7) |
| 1974 | 1594(2) | - | 1704(2) | 1411(8) |
| 1975 | 1821(4) | 1975 | 1887(4) | 1827(6) |
| 1976 | 2187(3) | 2303 | 2327(3) | 2110(5) |
| 1977 | 2378(4) | 2583 | 2523(4) | 2266(6) |
| 1978 | 2706(4) | 2925 | 2863(4) | 2710(6) |

TABLE 5.11: CLOTHING, AVERAGE ANNUAL WAGE BILL PER EMPLOYEE

| Year | Coops | Census of Production | Coops with bonus |
|---|---|---|---|
| 1967 | 531(3) | | 537(3) |
| 1968 | 528(2) | 606 | 559(3) |
| 1969 | 571(2) | | |
| 1971 | 788(2) | 777 | 807(2) |
| 1972 | 950(2) | 861 | 967(2) |
| 1977 | 2090(2) | 1890 | 2118(2) |

TABLE 5.12: PRINTING, AVERAGE ANNUAL WAGE BILL PER EMPLOYEE

| Year | Coops | Census of Production | Coops with bonus |
|---|---|---|---|
| 1967 | 878(7) | | 913(7) |
| 1968 | 953(7) | 1059 | 981(7) |
| 1969 | 950(6) | | 964(7) |
| 1970 | 1101(7) | 1288 | 1112(7) |
| 1971 | 1176(5) | 1479 | 1208(5) |
| 1972 | 1373(5) | 1622 | 1395(5) |
| 1973 | 1499(4) | 1791 | 1549(4) |
| 1974 | 1623(3) | | 1653(3) |
| 1975 | 2151(6) | 2620 | 2235(6) |
| 1976 | 2481(6) | 3033 | 2570(5) |
| 1977 | 2578(5) | 3445 | 2701(5) |
| 1978 | 3267(4) | 4004 | 3499(4) |

Sources: (i) Coops: Cooperatives' annual returns to the Cooperative Union and the Registrar of Friendly Societies.

(ii) Census of Production: Minimum List Headings; Footwear, General Printing & Publishing, Mens & Boys Tailored Outerwear, Dresses, Lingerie & Infants Wear.
The final two categories were combined under the heading "clothing" and were the two categories under which the clothing coops surviving in 1968 had been placed for the Census.

(iii) Capitalist firms: C.F.'s annual returns to the Registrar of Companies.

N.B. Figures in brackets indicate no. of firms or coops.

Many capitalist firms do not declare the size of their wages bill in their annual returns, and so average employee remuneration could not be calculated for most of the capitalist firms in the sample. Figures have been quoted for footwear firms in Table 5.10. For most years, the sample of firms paid on average a lower rate than found nationally by the Census of Production. Footwear coops appeared no better or worse than the capitalist firms. These results suggest that there are factors,acting on our sample of both coops and capitalist firms, which pushed their wages below average. Two probable causes are (i) the size of the establishments, and (ii) the location of the plant.

The Census of Production breaks down the wages and employment statistics by size of establishment. In Table 5.13 the industry figures are compared with figures for establishments with a workforce similar in size to the average cooperative workforce.

TABLE 5.13 AVERAGE REMUNERATION PER WORKER BY SIZE OF ESTABLISHMENT.

| | Footwear | Clothing | Printing |
|---|---|---|---|
| 1968 | | | |
| 1. All establishments | 811 | 606 | 1059 |
| 2. Estab. size = ave. coopsize | 789 | 592 | 1075 |
| 2 as a % of 1 | 97.3 | 97.7 | 101.5 |
| 1978 (clothing 1977) | | | |
| 1. All establishments | 2925 | 1890 | 4005 |
| 2. Estab.size = Ave. coop size | 2644 | 1948 | 3938 |
| 2 as a % of 1 | 90.4 | 103.1 | 98.3 |

Source: Census of Production

Comparing Table 5.13 with 5.10 we can see that once allowance is made for the size of the footwear cooperatives, then the difference between the average remuneration of workers in footwear coops and capitalist firms disappears. Once the workers bonus is added in, the cooperative workers appear to have been better of.

In 1968 the earnings of workers in clothing coops compared badly with that of C.F. employees. Even the adjustment for size, and the addition of the workers' bonus did not recover their position. By 1971, however, the situation had reversed. Even after adjusting for the fact that the two clothing coops were larger than the average clothing firm, the coops paid on average more than their capitalist counterparts.

The National Board for Prices and Incomes reported that adult males working in Central England earned on average 94% of the national rate, and females 97%[18] in 1968. All of the surviving clothing coops operated in the Midlands. Adjusting for both the size and location of the clothing coops brings the cooperative workers earnings in 1968, including their bonus, in line with C.F. earnings. Without the bonus cooperatives still fell behind.

The printing cooperatives showed up very badly against the Census of Production figures. Adjustment for size of the coops does nothing to rectify the situation. Allowing for the location of the coops does reduce the difference, but the gap remains substantial.[19]

We cannot draw any definite conclusions from these figures because the samples of both coops and capitalist firms are so tiny. Secondly, the data used for comparison is of dubious validity. Dividing the annual wage bill by the number of employees does not take account

of part-time workers, differences in hours, differences in skill and occupational structures, and changes in the size of the workforce during the year. We can only hope that conditions were similar in the cooperatives and capitalist firms with regard to these characteristics.

Although it is impossible to draw any firm conclusions, the evidence does not rule out the possibility that workers in the footwear and clothing coops have enjoyed higher incomes than their counterparts in capitalist firms since 1970.

## 7. Have British Cooperatives Failed?

There is no evidence to support the theory that British cooperatives are doomed to failure. The CPF coops have apparently done no worse than similar capitalist firms over the last thirty years. The enormous drop in the number of C.P.F. cooperatives reflected the growing concentration within their industries, and the almost negligible formation of producer cooperatives between 1950 and the mid 1970's. Nick Wilson has provided evidence that in recent years the producer cooperative sector has been growing much more rapidly than other small businesses in Britain[20] (although coming from such a small base, this is no great feat).

In line with other studies of cooperatives, this section has concentrated on comparing coops to similar capitalist firms. For the CPF coops this meant comparing the coops to small firms in declining industries. The surviving clothing coops were, in fact, much larger than the average British clothing manufacturer. In 1977 the two coops employed 94 and 540 workers each. At that time 80% of clothing firms employed less than 50 workers. Even so, the clothing coops were small employers by manufacturing standards. In 1977 only 0.9%

of manufacturing enterprises employed one thousand or more workers, but these large enterprises provided 64.6% of employment in manufacturing.[21]

New coops are certainly not breaking the mould. It is well known that most are very small. None of Wilson's sample of fifty five coops employed more than fifty workers, and half employed ten or less.

In this chapter we have discovered that British coops are not so different from many other small British firms. But it is no secret that small businesses are being squeezed out of manufacturing. (In 1958 only 54.9% of employment in manufacturing was with firms employing one thousand or more people). If we are to understand why producer cooperatives have remained on the periphery of the economy, then we must ask why no cooperatives have broken through the size barrier. This issue will be taken up in Chapter 8.

FOOTNOTES TO CHAPTER 5

1. The only British example is:
   JONES, D.C. (1974) "The Economics of Producer Cooperatives", Unpublished Ph.D. Thesis, Cornell University.
   Other examples are:
   (a) THOMAS H. & LOGAN C. (1982) "Mondragon, an Economic Analysis", George Allen & Unwin.
   (b) JONES, D.C. (1979), "U.S. Producer Cooperatives: The Record to Date", Industrial Relations, Vol. 18.
   (c) BERNSTEIN, P. (1977) "Worker Owned Firms Steadily Outperform Industry". World of Work Report, June 24.

2. Some recent examples are:
   (a) OAKESHOTT, R. (1978) "The Case for Workers' Coops". Routledge & Kegan Paul.
   (b) O'CONNOR, R. & KELLY, P. (1980) "A Study of Industrial Workers' Cooperatives". Broadsheet no. 19, Economic and Social Research Institute, Dublin.
   (c) THORNLEY, J. (1978) "Workers' Cooperatives in France", C.E.S. Occasional Paper 6. Centre for Environmental Studies.
   (d) CHAPLIN, P. & COWE, R. (1977) "A Survey of Contemporary British Worker Cooperatives", Manchester Business School, Working Paper Series 36.

3. JONES, D.C. (1974) Ph.D. Thesis quoted above. The data on small firms was taken from the "Report of the Committee on Inquiry into Small Firms."

4. DEPARTMENT OF TRADE (1968), "Companies Annual Report."

5. COOPERATIVE DEVELOPMENT AGENCY (1980) "Coops: A Directory of Industrial and Service Cooperatives."

6. As explained in Appendix 3, two samples of capitalist firms were selected for each industry. Only the first sample of each were looked at in detail.

7. Sample 1 after deducting companies not traced, and those found to be wrongly classified.

8. JONES, D.C. (1980) "Producer Cooperatives in Industrialised Western Economies." British Journal of Industrial Relations, Vol. 18, July.

9. THOMAS, H. & LOGAN, C. (1982) As above.

10. JONES, D.C. (1974) Ph.D. Thesis quoted above.

11. WILSON, N. (1982) "Economic Aspects of Worker Cooperatives in Britain", in "The Economics of Worker Cooperatives", Plunkett Foundation.

12. Economic Indicators, 1982.

13. "Clothing is the sum of three S.I.C. categories under which the cooperatives in the sample were listed in the 1968 Census of Production, i.e. Hosiery & Other Knitted Goods; Mens & Boys Tailored Outerwear; Dresses, Lingerie and Infants Wear. Prior to 1958, the last two categories were grouped with several other sectors under "Tailoring & Dressmaking". The rise in the index between 1950 and 1958 represents the change in employment of tailoring and dressmaking plus hosiery and knitwear.

14. The 1950 Census of Production figures were estimates.

15. JONES, D.C. "British Producer Cooperatives" in K. COATES, (ed.) (1976) "The New Worker Cooperatives", Spokesman.

16. JONES, D.C. (1974) Ph.D. thesis quoted above.

17. Census of Production.

18. NATIONAL BOARD FOR PRICES AND INCOMES (1969) "Pay and Conditions in the Clothing Manufacturing Industries", Report No. 110. See Table 7 in the Statistical Supplement.

19. The seven printing cooperatives surviving in 1968 were based in the Midlands (4), London, South West and Yorkshire. Using the regional figures published in the NATIONAL BOARD FOR PRICES AND INCOMES, Report No. 2, "Wages Costs and Prices in the Printing Industry", a weighted average of weekly earnings of male manual workers for these regions was found to be 93.6% of the national average in October 1964.

20. N. WILSON (1982) As above.

21. Census of Production 1977. Summary Table No. 4.

# CHAPTER 6

## DO THE THEORIES OF COOPERATIVE FAILURE FIT THE EVIDENCE?

A number of theories about why cooperatives fail or perform badly were described in Chapter 3. The evidence reported in the previous chapter does not support the view that cooperatives under capitalism face more problems than capitalist firms, and so are more prone to failure.. Perhaps then, we should abandon all the theories at this point. It may be, however, that these theories can help to explain the experience of British coops in recent decades. In this section we judge the theories against the evidence from the CPF coops.

### 1. Raising Funds

Table 6.1 compares the balance sheet structure of the CPF coops with that of public companies, small manufacturing firms, and the sample of capitalist footwear firms still trading in 1975.

It has been suggested that cooperatives' inability to issue shares has been a severe restraint on their fund raising. It is clear from Table 6.1 that over the 20 years from 1955 to 1975 there has been a very marked drop in the significance of equity capital for both listed companies and the CPF coops. In 1975 small manufacturing firms relied on share capital far less than listed companies. The average capital employed (equity + reserves + long-term loans) of cooperatives in 1975 was £189,400. Coops therefore fall into the category "smaller" firms designated by the "Committee to Review the Functioning of Financial Institutions". The Committee found that in 1975 only 6.4% of this group's total liabilities were taken up by equity. This was marginally less than the average cooperative figure of 7.5%. The sample of

capitalist footwear firms showed a surprisingly high reliance on equity in 1975 - 16.9%.of the total liabilities of the independent firms. This may be partially explained by the larger size of the footwear firms. The capital employed by the C.F.'s averaged £271,330 in 1975. Consequently they would just slip into the "intermediate" category of firms.

Measuring equity capital on its own is, however, very misleading. Although seven of the independent footwear firms increased the nominal capital taken up between 1955 and 1975, only three of these actually raised funds by doing so. The remaining four merely "capitalised undivided reserves". In other words, the rise in equity was exactly matched by a drop in reserves. Of the three firms which did raise funds, one was a public company. This company issued shares to raise funds for the purchase of a subsidary. Consequently, the share issue could not be seen as a scheme for raising funds for new investment, but only for the purpose of transferring the ownership of existing assets. A second firm issued shares to the International Sports Company Dunlop & Slazenger , and turned to concentrating on sports footwear. The funds were said to be provided "to further the trading activities of the company". In this case the International Sports Company, although it did not take a controlling interest, acted almost like a parent company feeding funds into a subsidary. The third company raised a total of £89 between 1955 and 1975.

Over the twenty years up to 1975 the nominal value of the footwear firms' equity increased by 47%, of which 29% was accounted for by the capitalization of reserves, and most of the remainder was taken up with the share issue of the one public company in the sample.

TABLE 6.1 BALANCE SHEET STRUCTURE OF COOPERATIVES AND CAPITALIST FIRMS

PER CENT DISTRIBUTION OF TOTAL ASSETS AND TOTAL LIABILITIES.

| | ALL COOPS (CPF) | | | FOOTWEAR CF 1975 | | LISTED COMPANIES | | | SMALLER MFR.FIRMS 1975 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1955 (25) | 1965 (23) | 1975 (14) | ALL C.F. (18) | INDEP. (11) | 1955 | 1965 | 1975 | SMALLER | INTERMED. | TOTAL |
| Fixed Assets (net of depreciation) | 14.9 | 17.3 | 12.8 | 21.6 | 20.0 | 37.0 | 45.0 | 40.5 | 29.8 | 27.1 | 27.9 |
| Current Assets | | | | | | | | | | | |
| Stock & Work in progress | 38.6 | 37.3 | 41.3 | 42.1 | 41.0 | 29.1 | 24.9 | 27.1 | 21.5 | 32.6 | 29.4 |
| Trade & other debtors | 16.1 | 21.3 | 25.8 | 23.0 | 25.8 | 20.0 | 21.6 | 22.1 | 34.8 | 34.5 | 34.6 |
| Investments(including unconsolidated subsidaries) | 23.2 | 18.6 | 11.4 | 1.4(8.3)[A] | 2.3(5.2)[A] | 8.1 | 5.0 | 5.1 | 3.5 | 2.7 | 2.9 |
| Cash & short-term deposits | 6.7 | 5.0 | 7.5 | 3.6 | 5.7 | 5.8 | 3.5 | 5.2 | 10.4 | 3.1 | 5.2 |
| Other current assets | 0.5 | 0.5 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Current Assets & Investments | 85.1 | 82.7 | 87.2 | 78.4 | 80.0 | 63.0 | 55.0 | 59.5 | 70.2 | 72.9 | 72.1 |
| TOTAL ASSETS | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Current Liabilities | | | | | | | | | | | |
| Bank overdrafts & short term loans | 1.5 | 5.4 | 10.3 | 4.8 | 7.2 | 3.1 | 6.2 | 9.3 | 9.4 | 11.0 | 10.6 |
| Trades & other creditors | 11.7 | 13.0 | 19.9 | 22.7 | 27.4 | 15.9 | 17.3 | 26.7 | 35.7 | 29.5 | 31.3 |
| Current taxation | 1.4 | 2.5 | 3.3 | 4.1 | 3.5 | 5.5 | 2.8 | 2.2 | 3.8 | 3.4 | 3.5 |
| Other current liabilities | 4.4 | 0.3 | 0.1 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0 0 |
| Dividends & interest due | 4.8 | 4.4 | 1.5 | 2.0 | 1.5 | 1.5 | 1.7 | 1.1 | 0.5 | 0.9 | 0.7 |
| Total Current Liabilities | 23.8 | 25.6 | 35.1 | 33.6 | 39.7 | 26.7 | 28.0 | 39.3 | 49.4 | 44.8 | 46.1 |
| Net Current Assets | 61.3 | 57.1 | 52.1 | 44.8 | 40.3 | 36.3 | 27.0 | 20.2 | 20.8 | 28.1 | 26.0 |
| Total Net Assets | 76.2 | 74.4 | 64.9 | 66.4 | 60.3 | 73.3 | 72.0 | 60.7 | 50.6 | 55.2 | 53.9 |
| Long-Term Liabilities | | | | | | | | | | | |
| Nominal Capital | 22.9 | 18.7 | 7.5 | 17.3 | 16.9 | 28.3 | 27.1 | 12.6 | 6.4 | 11.6 | 10.1 |
| Reserves (ind.tax equalisation) | 24.1 | 34.1 | 46.5 | 39.6 | 42.7 | 35.2 | 32.8 | 34.8 | 34.8 | 35.6 | 35.4 |
| Total shareholders' interests | 47.0 | 52.8 | 54.0 | 56.9 | 59.6 | 63.5 | 59.9 | 47.4 | 41.2 | 47.2 | 45.5 |
| Loans from members or directors | 28.7 | 21.4 | 9.0 | 0.2(9.0)[B] | 0.3 | * | * | * | 8.3 | 0.8 | 3.0 |
| Other long-term loans | 0.5 | 0.2 | 1.9 | 0.3 | 0.4 | 9.8 | 12.1 | 13.3 | 1.1 | 7.2 | 5.4 |
| Total Capital & Reserves | 76.2 | 74.4 | 64.9 | 66.4 | 60.3 | 73.3 | 72.0 | 60.7 | 50.6 | 55.2 | 53.9 |
| TOTAL LIABILITIES | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

SOURCES/....

SOURCES:

Small Firms: "Committee to Review the Functioning of Financial Institutions". Research Report No. 3, "Studies of Small Firms' Financing." p. 10.

Listed Companies: Annual Abstract of statistics, 1955, 1965 and 1975.

Figures in brackets indicate size of sample.

"Smaller" Companies - Capital employed $<$ £250,000

"Intermediate" Companies - Capital employed $\geqslant$ £1¼m. $\leqslant$ £4m.

*Includes under other long-term loans.

A Owed by Parent Company, fellow subsidary , or subsidary company

B Owed to Parent Company or fellow subsidary.

The fourteen cooperatives still operating in 1975 saw a very slight increase (0.2%) in the value of their share capital between 1955 and 1975. Cooperatives are quite unlike limited companies in that their share capital may be withdrawn on demand. Many cooperatives therefore suffered a drain on funds as the labour force shrank and as other cooperative societies (usually holding a sizeable proportion of cooperative shares) went into liquidation. The cooperatives were able to compensate for this by raising the minimum shareholding necessary for membership. Even so, eight of the fourteen cooperatives suffered a drop in their nominal capital between 1955 and 1975, although only four suffered a drop of more than 10%.

By 1975 share capital formed such a minor part of Cooperative funds that the drop in value suffered by some coops probably had a negligible effect on funds available. Certainly none of the coops raised this as a difficulty in their annual reports. We can see in Table 6.1 that the coops more than compensated for the fall in the share of nominal capital by increasing reserves.

We have seen that nominal capital is, of itself, a meaningless value. This is not only because limited companies transfer funds from reserves into equity by capitalising profits, but also because a share issue may raise much more than the nominal value of the shares. This additional sum, the share premium, will be recorded as part of the shareholders'reserves. It is far more interesting, then, to look at the debt/equity ratio of enterprises. This term (long-term loans divided by shareholders'funds) gives us some idea of the degree to which an organisation relies on external as opposed to internal funds for long-term finance.

It is clear from Table 6.2 that cooperatives' reliance on external long-term funds is very similar to that of other small manufacturing

TABLE 6.2 DEBT/EQUITY RATIOS IN 1975

| TYPE OF ENTERPRISE | MEAN D/E RATIO |
|---|---|
| CPF Coops | 0.20 |
| Independent Footwear CF | 0.01 |
| Listed Companies | 0.28 |
| Smaller Mfr. Firms | 0.23 |
| Intermediate Mfr. Firms | 0.17 |

firms. As with the smaller manufacturers, most of these so-called "external" funds are made up of loans from existing shareholders. The sample of footwear firms made very little use of directors loans, and consequently had an exceptionally small debt/equity ratio. For all three categories (coops, footwear c.f., and smaller manufacturing firms) long-term bank loans or mortgages formed a negligible part of long-term funding.

Short-term borrowing, usually in the form of overdrafts, was the main source of bank loans for coops and small firms. Coops' reliance on this form of funding was little different from other small firms. The major source of short term funds was, however, trade credit. Here we find a noticeable difference between coops and other small firms. Coops apparently relied far less on trade credit, and this explains why coops' current liabilities formed a much smaller proportion of total liabilities than generally found among small firms. Over the twenty years since 1955, trade credit has become a growing source of short-term finance. Cooperatives have followed this trend, but have not exploited it to the same extent as capitalist firms. It is not known whether this is due to the cooperatives' tendency to be

over cautious, or because prejudice against cooperatives restricted the credit available to them.

The arguments outlined under section 3 of Chapter 3 suggested that cooperatives faced more difficulties in raising finance than small firms because of

(a) the prejudice of financial institutions, or

(b) their limited ability to raise money through share issues.

The evidence does not support the latter argument. Very few small firms raise funds by share issues. The big investors are no more interested in putting money into small firms than into coops. Even for large companies, equity has become a negligible source of funds. Minns reports that less than 5% of new capital for companies is raised by share issues.[1] For most firms, internal funds are now the main source of long-term finance.

It is possible that equity is still an important source of funds for new businesses. The Wilson Committee reported, however, that "few new businesses now have any source of equity other than that provided by the proprietor himself".[2] Unless it happens that potential new businessmen are universally richer than potential cooperators, then there is no reason to believe that new capitalist firms enjoy any better starting conditions than new coops. For both groups, raising funds is extremely difficult. Chaplin and Cowe made a survey of new coops and found that the initial difficulties are "similar to those of any small business, i.e. finance and premises".[3]

Once cooperatives are established, the CPF coops provide no evidence to support the theory that they face more difficulties, because

of the prejudice of financial institutions, in raising external finance. It is well documented that all small firms have difficulty in raising external funds,[4] but apparently the CPF coops were no less successful than other firms in obtaining bank loans and overdraft facilities. The only area where prejudice may be apparent is in the availability of trade credit for cooperatives.

The information presented in Table 6.1 is not entirely satisfactory because we cannot know if cooperatives might have grown more quickly if more external loans had been available. It may be that they maintained a similar debt/equity ratio to other small firms by growing more slowly. Unfortunately sales figures are not available for most of the sample of small firms before 1967. In Table 6.3 the growth in turnover from 1968 to 1978 is compared for organisations which continued to trade over this period, and for which sales figures are available.

TABLE 6.3: COMPARING GROWTH IN TURNOVER

| Type of Enterprise (number in sample) | Mean % Increase in Turnover 1968-1978 | t value | Degrees of freedom | T statistic @ 10% signif. level | Significant difference |
|---|---|---|---|---|---|
| All footwear CF (17) | 246.9 | 0.277 | 26 | 1.701 | No |
| All coops (11) | 224.8 | | | | |
| Indep.footwear CF(11) | 325.8 | 1.773 | 20 | 1.725 | Yes |
| Footwear coops (4) | 276.7 | 0.577 | 13 | 1.771 | No |

The increase in turnover is measured in money terms. Over the same period the retail price index rose by 202% so that, in fact, none of the categories displayed an exceptional rise in real turnover

On average, the coops have grown less quickly than the capitalist footwear firms, but the difference is not significant at the 10% level. The growth of subsidaries is very dependent on the decisions of parent companies, who often shift operations from one subsidary to another. The independent footwear firms did display a significantly higher growth in sales than the coops. But the footwear coops enjoyed a faster growth in sales than other coops, and their growth, although less than that of independent firms, was not significantly different at the 10% level.

Cooperatives do appear to have lagged slightly behind the independent footwear firms in terms of sales. Is this because of their shortage of funds for new investment? To answer this, we must look in more detail at exactly how the capitalist firms achieved their growth. This will be discussed in Chapter 7 .

## 2. The Self-Extinction Forces

Jones and Backus looked for evidence of Vanek's self extinction forces among the CPF footwear coops. It was explained in Chapter 1 that, according to the neoclassical theory of the labour-managed firm, an LMF relying entirely on external finance will aim to produce at local constant returns to scale. The LMF using internal finance, will however, if operating with a production function with decreasing returns to scale, operate in the inefficient increasing returns to scale zone. Jones and Backus predicted, therefore, that the worker managed (internally financed) firm "will be in (or tending towards) long-run equilibrium:

(i) in the increasing returns to scale zone of the production function;

(ii) at a lower level of output;

(iii) where it is underinvesting and consequently operating with a lower capital-labour ratio."[5]

Jones and Backus began by estimating production functions for CPF footwear firms from 1948 to 1968. The initial estimates showed no evidence of returns to scale, which consequently excluded the possibility that the coops could be operating in the increasing returns scale.

Next Jones and Backus divided the coops into those with more than 100 employees, and those employing less than 100 people, arguing that returns to scale are dependent on the level of output. The returns to scale estimate was now strongly significant for the small P.C.'s, but much less so for large P.C.'s. The authors took this as evidence that internal financing did have a significant effect on the operation of cooperatives. Since the large coops had apparently succeeded in breaking out of the inefficient zone, this conclusion is not entirely convincing. It may be true that small P.C's are operating at inefficient returns to scale, but is there any evidence to suggest that this is because of internal financing, rather than other factors inhibiting the growth of cooperatives?

Jones and Backus tried to answer this question by introducing a measure of internal financing into the production function estimates. They argued that the greater the degree of internal financing then the lower would be the productivity of the coop. The prediction was, therefore, that value added per worker would be negatively related to the degree of internal finance (= shareholders funds ÷ long-term loans). A negative (but very weakly significant) sign did appear for small coops, but not for those employing more than 100 persons. The authors admit that the results of this test "offer only limited support for Vanek's theory of financing".

A simpler test of the theory of financing might have been to ask if small P.C.'s, those which apparently have not escaped from the zone of increasing returns to scale, are more reliant on internal financing. If we look at 1958, the middle year of the Jones and Backus data, there were twelve footwear coops still operating from the original sample. Four of these employed more than 100 persons, and had a mean debt/equity ratio of 0.37. Eight employed less than 100 workers, and had a mean debt/equity ratio of 0.64. In other words, the smaller coops relied less on internal financing than did the large footwear coops. This contradicts Vanek's prediction, and suggests that small coops remained small for some reason other than their use of internal funds.

The second prediction tested by Jones and Backus was that internally financed coops working under a "U" shaped technology would operate at a lower level of output than their capitalist counterparts. To do this they compared the growth of producer cooperatives and capitalist firms over the period 1948 to 1968. Two indicators that they used were growth in average value added and average labour force size per establishment. Both measures indicated a much slower growth rate among P.C.'s than for capitalist firms.

The results quoted in Table 6.3 and Section 4 of Chapter 5 would seem to contradict Jones and Backus. The difference appears because Jones and Backus derive their figures from aggregate industry statistics, whereas our measure of C.F. growth was derived from small firms.

The average British footwear firm it is true has grown more quickly than footwear cooperatives over the last 30 years. It will

be argued in Chapter 7 , however, that a significant proportion of this growth was the consequence of a flood of mergers and takeovers, rather than internal growth. The difference observed between P.C.'s and C.F's is, therefore, not a consequence of internal financing among P.C.'s, but because cooperatives have not participated in the mergers and takeovers found among capitalist firms.

The work of Jones and Backus began by assuming the existence of economies of scale in the footwear industry. If, in fact, the industry faced constant returns to scale, then we would not expect to find cooperatives operating in the zone of increasing returns to scale. On the other hand, under CRS, Vanek's self-extinction forces should act more powerfully.

The first estimates that Jones and Backus applied to all sizes of footwear cooperatives did not indicate any significant economies of scale among footwear cooperatives. Other evidence suggests that economies of scale are quite small. Pratten and Dean's study in the 1960's found economies of scale to exist, although to be small compared with industries such as engineering.[6]

TABLE 6.4: INDEX OF UNIT PRODUCTION COSTS FOOTWEAR 1962

| Output Capacity* | 300 | 600 | 1200 | 2400 | 4800 |
|---|---|---|---|---|---|
| Unit production costs | 100 | 97 | 95.5 | 94 | 93 |

Source: Pratten & Dean.

*Pairs per day

Pratten and Dean did not study the other two sectors in which the CPF cooperatives mainly operated, i.e. clothing and printing. The Census of Production, however, includes estimates of net output (turnover + change in stocks - cost of materials, fuel and transport) per employee. This figure does not accurately reflect economies of scale, because the average capital/labour ratio may be significantly different across the range of establishment sizes. The estimates reported in Table 6.5 suggest, however, that there was no consistent increase in economies with increasing size.

TABLE 6.5: NET OUTPUT PER PERSON EMPLOYED

| Ave. Number employed | Footwear | Printing | Mens & Boys Tailored Outerwear | Dresses, Lingerie & Infants Wear | Hosiery & other knitted goods |
|---|---|---|---|---|---|
| 25-49 | 722 | 853 | 567 | 544 | 665 |
| 50-99 | 646 | 846 | 522 | 500 | 706 |
| 100-199 | 683 | 858 | 561 | 546 | 685 |
| 200-299 | 661 | 913 | 468 | 530 | 679 |
| 300-399 | 744 | 985 | 503 | 495 | 721 |
| 400-499 | 701 | 920 | 575 | 440 | 725 |
| 500-749 | 768 | 865 | 534 | 506 | 688 |
| 750-999 | 663 | 926 | 421 | 450 | 826 |
| 1000-1499 | 708 | | 532 | | 787 |
| All sizes | 700 | 905 | 516 | 516 | 728 |

NB. In 1950 the maximum number of employees per CPF coops were: Footwear 445; Printing 180; Clothing 1273.

If economies of scale do not fall drastically with decreasing size, then we might expect that the four forces described by Vanek could help to explain the failure of so many coops since 1950.

One way to check Vanek's theory of financing, is to ask whether cooperatives which have ceased trading relied more on internal finance than those which have continued to operate. We would expect Vanek's forces to operate over a number of years, and so we must look at the cooperatives' reliance on internal finance some time before they ceased to operate. Table 6.6 compares the financial position in 1950 of cooperatives which were still trading by 1978, and those which ceased production. Five ratios are compared.

(i) Debt/Equity Ratio 1 = $\frac{\text{members' loans + other long-term loans}}{\text{share capital + reserves}}$

(ii) Debt/Equity Ratio 2 = $\frac{\text{other long-term loans}}{\text{share capital + reserves + members' loans}}$

(iii) Debt/EquitytRatio 3 = $\frac{\text{non-employee shares + members' \& other l/t loans}}{\text{reserves + employees' share holdings}}$

(iv) Gearing Ratio 1 = $\frac{\text{members' \& other l/t loans + overdrafts}}{\text{share capital and reserves}}$

(v) Gearing Ratio 2 = $\frac{\text{all l/tloans + overdrafts \& tr.cred. + deferred ta}}{\text{share capital + reserves}}$

TABLE 6.6: COOPERATIVES'USE OF INTERNAL FINANCE IN 1950

| Mean Ratios | D/E Ratio 1 | D/E Ratio 2 | D/E Ratio 3 | G Ratio 1 | G Ratio 2 |
|---|---|---|---|---|---|
| All coops | 0.42 (31) | 0.02 (31) | 0.68 (25) | 0.54 (31) | 0.78 (31) |
| Coops Alive 1978 | 0.62 (12) | 0.03 (12) | 0.72 (10) | 0.66 (12) | 0.85 (12) |
| Coops Dead by'78 | 0.30 (19) | 0.01 (19) | 0.66 (15) | 0.46 (19) | 0.74 (19) |

Debt/Equity Ratio 1 measures the proportion of long-term finance not funded out of share capital or reserves. Live coops, on average, used more external finance than did those which were dissolved. The great majority of this external finance was, however, loans from members. This could be seen as a form of internal finance. Debt/Equity 2 Ratio shifts members' loans from the numerator to the denominator. Live coops still made more use of external finance, although the proportions were so small as to be insignificant. Debt/Equity Ratio 3 takes account of the fact that a large proportion of share capital is not held by employees. In one sense, non-employee members provide a form of external finance. The fixed interest paid on their shares (cooperatives pay fixed interest rather than dividends on shares) makes share capital very similar to loan finance. Indeed, a prime motive for encouraging non-worker members is to boost the funds available for investment. D/E Ratio 3 is, once again, higher for live coops than those which ceased operations.

Vanek's theory of financing was referring to the financing of capital expenditure. This is generally paid for out of long-term loans or shareholders' funds. The importance of internal finance for capital is measured by the three debt/equity ratios. Sometimes, however, short-term funds may also support capital expenditure. The two gearing ratios in Table 6.6 include short-term funds in the measure. Once again, live coops,in 1950 used on average a higher proportion of external finance than coops which have since closed down.

It would be wrong to attach a great deal of importance to these results, as none of the five ratios were significantly different between live and dead coops. Even so, these results certainly do not rule out Vanek's hypothesis. On the other hand, it is quite possible that

the dead coops' weak position made it difficult for them to raise external funds. Alternatively, their own poor use of outside finance may have made them more prone to failure. In other words, coops which rarely make use of external funds may be more likely to cease trading, but not for the reasons postulated by Vanek.

Vanek believed that cooperatives relying on internal funds would choose to run down their operations. In order to find out if this happens, we must look more closely at the behaviour of cooperatives before they closed down. Unfortunately Vanek did not specify how long he expected this process to take. It would certainly have to be within a working lifetime. No members would benefit from a build up of income or reserves after they have left the cooperative(especially since shares may only be withdrawn at their nominal value). Most of the cooperatives in the sample were dissolved in the mid '60's, and so these cooperatives could only be traced for a period of 15 years prior to closure. For some, 15 years of data was not available. The minimum period studied was nine years. It may be that Vanek's forces took more than 15 years to run their course, but hopefully their impact will still be visible in the final years.

Vanek described four forces, as explained in Chapter 3. One of these, the under-investment force, has been discussed by Jones and Backus.[7] In this section, therefore, only the first, second and fourth force will be monitored. The fourth force, the "never employ" force, is the easiest to test. Information is available for 14 cooperatives which stopped operating in 1959 or later. Although most of these saw a large run down of the workforce in the final years, we can see from Table 6.7 that all of them increased their labour force at least once in the

6 years before closure. Three of the cooperatives actually increased their labour force in the year that they ended operations.

An increase in the labour force need not necessarily coincide with a rise in membership. Existing members may choose to run down the membership by replacing departing members with hired employees. Unfortunately, the information on membership among employees was not sufficient to determine any pattern. The information would be misleading anyway, for we saw in section 5 of Chapter 5 that membership among employees is basically a function of bonus payments to workers. Most of the cooperatives had a rule requiring workers to capitalise their bonus until they had acquired sufficient shares to qualify for membership. Consequently, a decision to recruit new workers was, in effect, a decision to acquire new members.

It is possible that existing members were cunning enough to vote against bonus payments in the final years. Seven of the cooperatives did, however, pay a bonus during the last five years. The high correlation between bonus payments and profits reported in section 5, Chapter 5, is a sign that bonus payments were stopped because of falling profits, rather than to exclude membership. The experience of these CPF coops does not, therefore, give any support to Vanek's prediction of a "never employ" force.

Vanek's first two self-extinction forces predict that remaining members will increase their income by allowing both the workforce and capital assets to run down. These members will then be able to enjoy the income foregone (as internal financing) by members who have left.

If these forces are effective we would expect to see members' income rising in the years before dissolution.

Members of CPF cooperatives receive income from four sources: (i) Wages and Salaries; (ii) Bonus Payments; (iii) Share Dividends; (v) Payments to shareholders on dissolution. The boost in income predicted by Vanek may be shared out regularly by the first three methods, or saved to the end and paid out to share-shareholders when the assets are liquidated. (N.B. Liquidation is the only time when British cooperatives may pay out more than the nominal value on shares[1].

Let us begin by looking at payments to contributors on dissolution. The amount paid to shareholders is known for eleven of the fourteen cooperatives. Seven of these did pay more than the nominal value of the shares, i.e. shareholders received more than they had paid for their shares. The premium received on the shares was estimated to be, at most, a third of members' salaries in the final year, and in most cases considerably less.

It might seem, therefore, that some cooperatives at least, had stored up wealth to distribute on closure. At this point we must ask whether members had added to this store of wealth in the final years. Given the existence of inflation (and the fact that, if cooperatives did pay dividends on shares, it was usually at a fixed rate below the rate of inflation) then the undivided wealth of the members would have to show a significant increase in

*TABLE 6.7: EXPERIENCES OF COOPERATIVES IN THE 15 YEARS PRIOR TO CLOSURE*

| Coop | Product | Number of Years Traced | Change in Reserves Between 1st & last yrs. | Final state of reserves | Trend in annual earnings as % of National average | Overall Gain in annual earnings in last years? | Last year in which labour force was increased | Final payment to Contributors (1) |
|---|---|---|---|---|---|---|---|---|
| 1. Excellon | Footwear | 15 | Down | + ve | Up | Yes | $T^{-3}$ | >1 |
| 2. Glenfield | Footwear | 15 | Down | + ve | Indef. | Yes | $T^{-2}$ | >1 |
| 3. Hull | Printers | 15 | Down | - ve | Down | No | $T^{-4}$ | >1 |
| 4. Toy Town | Footwear | 15 | Down | - ve | Down | No | $T^{-6}$ | <1 |
| 5. Sperope | Footwear | 15 | Down | - ve | Down | No | $T^{-5}$ | 0 |
| 6. Wigston | Hosiery | 15 | Up | + ve | Down | No | $T^{-1}$ | >1 |
| 7. Crompton | Footwear | 15 | Down | + ve | Indef. | No | $T^{0}$ | NK |
| 8. Holyoake | Footwear | 15 | Down | - ve | Up | Yes | $T^{-2}$ | 0 |
| 9. Kaycee | Clothing | 15 | Down | - ve | Indef. | No | $T^{-6}$ | NK |
| 10. Midland | Footwear | 9 | Down | + ve | Down | No | $T^{0}$ | NK |
| 11. Birmingham | Printers | 15 | Up | + ve | Down | No | $T^{-2}$ | $1^{\alpha}$ |
| 12. Chesham | Footwear | 9 | Down | - ve | Down | No | $T^{0}$ | >1 |
| 13. Bristol | Printers | 15 | Up$^{\mathcal{B}}$ | + ve$^{\mathcal{B}}$ | Down | No | $T^{-4}$ | >1 |
| 14. Gloucester | Printers | 15 | Down | - ve | Down | No | DK | >1 |

Notes : (1) 1 or 1 = More than or less than nominal value paid out on shares on dissolution. 0=Zero paid to shareholders on dissolution. NK = Not known.

$\alpha$ : Cooperative transferred. Existing shareholders paid the nominal value of their shares.

$\mathcal{B}$ : Reserves were increased by the sale of fixed assets at well above their written down value. The overall trend of reserves was down. The final reserves would have been negative except for these windfall profits.

$T^{0}$ : Is the year in which the cooperative went into liquidation.

Annual Earnings: (Wages & Salaries Bill + Workers Bonus) ÷ Number of employees.

Overall gain in annual earnings: (Annual earnings as % of national average in $T^{-15}$ ($T^{-9}$ if $T^{-15}$ not known) ) -(Ave. % annual earnings $T^{-14}$ to $T^{0}$). If this figure is negative then there was an overall gain in annual earnings in the last years.

the final years to lend any support to Vanek's theory. This increase in collective wealth would normally be recorded as a build up in the reserves of the ooperatives. In fact all but three of the cooperatives suffered a drop in the value of their reserves in the final years (see Table 6.7). Seven had even been reduced to negative reserves when they went into liquidation.

Three cooperatives managed to increase their reserves. One (Bristol Printers) did so by selling buildings at well above their written value. The underlying trend of the reserves was, however, downwards, and the final reserves would have been negative without this windfall profit.

Birmingham Printers, who also enjoyed an increase in reserves, are an unusual case. This cooperative was earning reasonable profits right up to the end, and there was no obvious reason for ending operations. This was the cooperative, mentioned in section 13, that had not passed a rule requiring workers to capitalise their bonus. By 1970 only 38% of the employees were members. The non-employee members sold their shares to the Cooperative Press, and "all engagements were transferred to the Cooperative Press". None of the employees of the Cooperative Press were members of that Coop. This was the only example of a takeover or merger found among the cooperatives.

Out of the fourteen coops described in Table 6.7, only Wigston Hosiers displayed any evidence of accumulating collective wealth prior to closure, and most saw a decline in their reserves before they ceased operations. One would not normally expect cooperatives acting under Vanek's first and second forces to behave in this way, but it is possible that they compensated for the drop in collective wealth by

paying themselves exceptionally high wages, bonuses and share dividends. We look at this next.

Information on average share dividends to employee members

which equals ( $\frac{\text{employee shareholdings}}{\text{total shareholding}} \times \frac{\text{share dividend}}{\text{employee members}}$ )

is only available for a limited number of years for each cooperative. The dividend paid in these years was, however, never more than 1% of the average annual wage, and usually considerably less.

The annual earnings from wages and salaries and the workers' bonus were traced for the fourteen cooperatives during the final fifteen (or nine) years. These average employee earnings were translated into a percentage of the national average of the industry and year concerned. The method by which these national averages were estimated is explained in appendix 3 .

Table 6.7 describes how workers' earnings changed as a percent of the national average during the final years. Nine of the fourteen displayed a downward trend. Only two of the cooperatives managed to boost workers' earning. For three of the cooperatives there was no definite trend, but only one of these managed an overall improvement in members earnings over the final years.

Only four cooperatives, out of the fourteen studied, displayed any evidence of increasing members' relative income during the final years. Wigston Hosiers did so by boosting reserves (although the fall in annual earnings may have outweighed this), and Excellon, Glenfield and Holyoake did so by increasing annual payments (although their reserves fell over the same period). All of these cooperatives, however, increased their labour force not long before they closed. The longest gap was three years prior to closure. Two of the cooperatives,

Excellon and Holyoake, enjoyed several years of good profits which apparently encouraged them to expand their labour force - exactly the opposite of the behaviour predicted by Vanek. Unfortunately they then suffered a sudden catastrophic downturn in trading conditions, which forced them into liquidation.

The other two cooperatives, Glenfield and Wigston Hosiers, showed a more steady downturn in performance, and the increase in the work-force before closure was very slight. We can see from Table 6.7, however, that neither of these cooperatives provide very convincing evidence of Vanek's theories. The overall increase in the income of Glenfield members was very small, while employees of Wigston Hosiers probably suffered a fall in relative income (the fall in annual income was unlikely to be outweighed by the premium paid on contributors shares).

We must conclude, therefore, that these fourteen CPF cooperatives showed no evidence of responding to Vanek's self-extinction forces.

## 3. Criticisms of Vanek's Theory of Financing

The CPF Cooperatives are not good subjects for a test of Vanek's theory of financing. The existence of non-employee members acts as a form of external finance. The fixed interest that must be paid on their shares, makes them very similar to a loan. The external membership will weaken Vanek's forces, as workers will want to keep up their numbers in order to spread the load of share capital payments to non-employee members. This factor should not be over-emphasised. Share interest has typically been low - usually 5%, although in recent years some cooperatives have adjusted it in line with prevailing rates. In 1965, share dividend paid to all members only absorbed 20% of the gross profits of the cooperatives.

Non-worker members may influence cooperative behaviour for a different reason. Like capitalist shareholders, they may wish to enjoy a steady and continuing income from their shares. On the other hand, if they want to benefit from the decline in labour they can only do so by closing down the cooperative and liquidating the assets. British cooperative law requires that fixed interest be paid on shares, so that share holders cannot funnel off profits by paying out high dividends. Neither can cooperative shareholders retrieve retained profits by selling their shares at appreciated prices. Cooperative shares may not be transferred, and may only be redeemed at their nominal value. Even non-employee shareholders would, therefore, have more reason for closing down an enterprise than would shareholders in the standard limited company. If the cooperative is paying a fixed interest which is well below the market rate, shareholders may well prefer to liquidate the assets and invest elsewhere.

It is possible that Vanek's forces were not evident among the CPF cooperatives because of their admission of non-employee members, but there are other reasons why the forces might be ineffective.

Several criticisms have been aimed at Vanek's theory. The most obvious is his assumption that members single-mindedly maximize income. The most usual objection to this is that workers will be concerned to provide employment for all the members. They will not, therefore, lay off workers, even if this would raise the income of those remaining. Vanek gets round this by assuming that the reduction in labour is achieved through attrition rather than redundancies.

Similarly, it might be argued that non-employee shareholders invest their money for the good of the cause, rather than to maximize their income. Indeed, any profit maximizing investor would be very

unlikely to choose the fixed interest bearing shares of the cooperatives. For the CPF cooperatives it is almost certainly true that the non-employee members (mainly composed of previous employees and other cooperative societies) would put the survival of the cooperative before their own personal gain.

This takes us to the next point. Why would any member choose to leave once their income has been boosted by the departure of the first member? Vanek assumes that the cooperative operates under the same conditions as the C.F., and therefore earns the same rate of profit, which is absorbed in the rate of interest in the case of external finance. Of course, if the cooperative is able to save enough to start relying on internal finance, we can see immediately that on average profits must be above the prevailing rate of interest. Therefore members would do better to remain in the cooperative and enjoy this profit, than extract their capital and deposit it in the bank. Secondly, once one member leaves, the workers income will be raised even further above the wages available in firms outside of the cooperative. Members who are ruthless income maximizers would, therefore, be expected to cling on to the cooperative until they died. Apparently the CPF cooperative workers were not ruthless income maximizers. Half of the fourteen cooperatives managed to pay wages above the national average for at least some of the final years, but many of these showed a decline in the labour force at the same time.

Probably the most plausible explanation for the failure of Vanek's forces is that Vanek has overestimated the importance of rental income as a proportion of total income. We saw that share dividends were usually less than 1% of annual earnings, and the final payment to contributors was never more than 30% of salaries in that year. Members are unlikely to forego regular wages for a very small one-off capital payment.

Vanek's hypothesis is also based on the assumption of a perfect product market, into which cooperatives can feed anything they produce.

In reality, if the cooperatives are to maintain any sales, then they must show themselves reliable and able to produce orders on time. When a worker leaves she must be replaced in order to ensure that orders are completed. To keep their position in the market, cooperatives must also invest in new technology in order to keep their products up to date. If members allow capital and workers to run down, then they are likely to find themselves forced out of the market much more quickly than they had intended.

Finally, we might note, that even if Vanek's forces were effective, they can easily be overcome by the passing of a few laws. Vanek has used his theory to advocate external financing for cooperatives. If cooperatives followed his advice, they would be moving very much against the trend of other firms in Britain. Such a move is not necessary, however. All that is needed is to introduce the Yugoslav requirement that cooperatives maintain the book value of their assets. Alternatively the Mondragon system might be used, whereby members may withdraw their share of retained profits when they depart. I.C.O.M. model rules also require that any cooperative assets left on liquidation must be donated to another cooperative society, or put into funds available to other cooperatives. This would discourage members from breaking up the assets for their own gain, although it would still be possible for them to rake off assets by paying exceptional wages in the final years.

## 4. Is Degeneration Inevitable?

In Chapter 3 we discussed three forms of degeneration. First there was straightforward degeneration into a capitalist firm. This has clearly not happened to CPF cooperatives, and is simply not possible under the Industrial and Provident Societies Act. After the experience of the Rochdale Cooperative Manufacturing Society, cooperative shares were made non-transferrable. In other words, shares could not be sold

to outsiders without the knowledge and agreement of existing members. Second, cooperatives must allow one vote per member. Individuals who build up a large stock of shares cannot, therefore, use this power to over-rule the wishes of other members. As with Vanek's self-extinction forces, the imposition of a few simple rules can remove the risk of this form of degeneration.

The other two forms of degeneration described in Chapter 3 have already been discounted by the evidence in section 5 of Chapter 5. Employee membership is basically a function of workers' bonuses, which is directly related to the profitability of the cooperatives. This relationship is the exact opposite of that predicted by Chiplin and Coyne who thought that cooperative members would raise their income by replacing members with hired workers. This is another example where a few rules can easily remove the problem. At the moment the Industrial and Providence Societies Act does not require employees to become members, most C.P.F. cooperatives did, however, have such a condition within their own rules. I.C.O.M. model rules require all employees to become members. Such a rule immediately removes the danger of degeneration foreseen by Chiplin and Coyne.

## 5. Conclusion

The purpose of this chapter was to test published theories of why cooperatives fail. This is not to imply that neoclassical theories could not be adjusted to take account ofthe C.P.F. cooperatives apparent lack of failure. For example, we saw in Chapter 2 that the introduction of slow wage adjustment into models of cooperatives, or of utility

maximization, is likely to produce predictions for cooperatives which are very similar to that of capitalist firms. Even so, it will be argued in the next chapter that however much neo-classical theory is adjusted, it will still be missing the dominant forces operating on cooperatives (and private firms) working within capitalism.

The literature abounds with excuses for cooperatives' poor performance. None of these explanations appear to fit the experience of C.P.F. cooperatives between 1950 and 1978. In many cases the doom forecast by the analysts can be circumvented by the introduction of a few simple rules. In fact, the cooperatives appear to have been just as successful as independent capitalist firms of similar size. But are these small capitalist firms typical? The question we must next ask is why cooperatives have remained on the scale of "small businesses"?

FOOTNOTES TO CHAPTER 6

1. MINNS, R. (1982) "Take Over the City". Pluto Press.

2. COMMITTEE TO REVIEW THE FUNCTIONING OF FINANCIAL INSTITUTIONS(1979) Interim Report "The Financing of Small Firms". H.M.S.O.

3. CHAPLIN, P. & COWE, R. (1977) "A Survey of Contemporary British Cooperatives". Manchester Business School Working Paper Series No. 36.

4. COMMITTEE OF INQUIRY ON SMALL FIRMS (1971). Research Report No. 5 "Problems of the Small Firm in Raising External Finance" H.M.S.O.

5. JONES, D.C. & BACKUS, D.K. (1977). "British Producer Cooperatives in the Footwear Industry". Economic Journal.

6. PRATTEN, C. & DEAN, R.M. (1965). "The Economies of Large-Scale Production in British Industry". Cambridge University Press.

7. JONES, D.C. & BACKUS, D.K. (1977). As above.

# CHAPTER 7

## THE EXPERIENCE OF CAPITALIST FIRMS 1950-1979

In Chapters 4, 5 and 6 we considered whether the experiences of the C.P.F. cooperatives and the sample of capitalist firms supported western theories that there would be distinct differences in the behaviour of the two types of enterprise. The questions that were addressed in those chapters were limited by the predictions made by existing theories.

In this and the following chapter we concentrate on those experiences of the firms which have not drawn the attention of cooperative literature. It is suggested that the vital differences between the behaviour of cooperatives and capitalist firms have not been identified by this literature.

The next chapter will look more closely at the motives behind the behaviour of the sample of capitalist firms, and asks why the cooperatives followed a different path. This chapter begins by highlighting the importance of acquisitions and mergers among the sample of capitalist firms. It then goes on to describe the changing structure of the industries in which these firms operated.

### A. THE FIRMS

#### 1. The Sample of Capitalist Firms 1950-1979

For each cooperative operating in 1950, four firms operating in both the same industry and the same geographical area were selected. This produced a sample of 60 firms in footwear, 40 in printing and 16 in clothing. A second set of samples was also selected for each industry as a cross-check on the experiences of sample 1. These second samples were not followed up in such detail. The data is described in more detail in Appendix 3.

TABLE 7.1 COMPARING THE SURVIVAL OF SAMPLES 1 & 2

| Industry | Footwear | | Printing | | Clothing | |
|---|---|---|---|---|---|---|
| Sample | 1 | 2 | 1 | 2 | 1 | 2 |
| Size of Sample | 60 | 60 | 40 | 40 | 16 | 16 |
| Corrected sample* | 57 | 59 | 37 | 37 | 12 | 16 |
| Number alive 1979 | 29 | 33 | 21 | 20 | 7 | 9 |
| Per cent alive 1979** | 50.9 | 55.9 | 56.8 | 54.1 | 58.3 | 56.3 |

* Some firms could not be traced. Others were in the wrong sector (usually wholesale or retail rather than manufacturing). The corrected sample excludes these two groups.

** Per cent of corrected sample.

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Table 7.1 compares the survival of each sample. The rate of survival is surprisingly similar both for the samples working in the same industry, and across industries. This result is encouraging and suggests that the samples were not atypical of small firms in their industry.

Table 7.2 describes the changing ownership of sample 1 of the capitalist firms. Unfortunately the Registrar of Companies destroys the records of companies dissolved more than twenty years ago, and only keeps a record of the names of these companies. We do not know, therefore, if these companies were taken over before being dissolved. It is interesting to observe that footwear manufacturers lost more than a fifth of their firms in the 1950's, whereas the decline in printing and clothing started later.

TABLE 7.2 OWNERSHIP OF CAPITALIST FIRMS 1950-79

| | Footwear | | Printing | | Clothing | |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % |
| Corrected Sample 1 | 57 | 100 | 37 | 100 | 12 | 100 |
| Remained Independent | 23 | 40.4 | 28 | 75.7 | 6 | 50.0 |
| Manufacturer in 1979 | 9 | 15.8 | 9 | 24.3 | 2 | 16.7 |
| Changed to Wholesale | 1 | 1.8 | 4 | 10.8 | 0 | 0 |
| Dormant or in liquidation | 1 | 1.8 | 1 | 2.7 | 1 | 8.3 |
| Dissolved | 12 | 21.1 | 14 | 37.8 | 3 | 25.0 |
| Taken over | 20* | 35.1 | 7 | 18.9 | 5 | 41.7 |
| Subsidiary manufacturing | 11* | 19.3 | 3 | 8.1 | 0 | 0 |
| Changed to Wholesale | 2 | 3.5 | 1 | 2.7 | 0 | 0 |
| Dormant | 5 | 8.8 | 3 | 8.1 | 4 | 33.3 |
| Dissolved | 2 | 3.5 | 0 | 0 | 1 | 8.3 |
| Subsidiary in 1950 | 1 | 1.8 | 1 | 2.7 | 1 | 8.3 |
| Subsidiary Manufacturing | 0 | 0 | 0 | 0 | 0 | 0 |
| Changed to Wholesale | 0 | 0 | 0 | 0 | 0 | 0 |
| Dormant | 0 | 0 | 0 | 0 | 1 | 8.3 |
| Dissolved | 1 | 1.8 | 1 | 2.7 | 0 | 0 |
| Dissolved before 1961 | 13 | 22.8 | 1 | 2.7 | 0 | 0 |

* Two companeis merged. The remaining firms were taken over.

Take-overs have been far more prevalent in the clothing and footwear industries than in printing. If we consider only those firms for which we have records of ownership, (i.e. not dissolved before 1961), then 50.0% of clothing manufacturers, 47.7% of footwear manufacturers, and 22.2% of printers, had been taken over by 1979.

None of the clothing subsidaries continued to trade as distinct firms. Four out of the five were dormant in 1979 and one had been dissolved. This does not mean that in practice these firms have ceased to trade. They may be operating as branches of the parent company.

Footwear firms have, on the other hand, often continued to operate as subsidaries, although two had been reduced to wholesale only. Only a quarter of the firms acquired were dormant by 1979, while 10% had been dissolved.

Take-overs were uncommon among small printers. Of those acquired, about half continued to operate as subsidaries, while half were dormant by 1979.

2. The Nature of Acquiring Firms

TABLE 7.3 ACQUIRING COMPANIES

| | Footwear | Printing | Clothing |
|---|---|---|---|
| Number of firms acquired | 21 | 8 | 6 |
| Parent companies were predominantly:- | | | |
| Manufacturers of same product | 13 | 4 | 3 |
| Wholesalers/Retailers of same product | 6 | 2 | 0 |
| Suppliers of materials | 0 | 0 | 3 |
| Consumers of product | 0 | 2 | 0 |
| Conglomerates | 2 | 0 | 0 |

The pattern of take-overs has varied between industries. We can see from table7.3 that horizontal take-overs have dominated footwear manufacturer. Most of these firms have been absorbed into larger groups of footwear manufacturers, often held under the umbrella of a holding company. Several firms in the sample were taken over by the same groups.

Two firms in the sample, which had already expanded by buying other footwear manufacturers, then merged to form one of the major footwear groupings.

There was also a significant number of vertical take-overs by footwear wholesalers or retailers. Two firms were acquired by the British Shoe Corporation, which is the largest wholesaler and retailer of footwear in Britain. Three firms were taken over by owners of multiple retail stores (Debenhams, United Drapery Stores and Great Universal Stores). The other firm was acquired by a smaller retail footwear chain.

Two footwear manufacturers were acquired by firms not previously operating in this field. One was bought by a group manufacturing textiles and gloves, the other by a very large and diverse conglomerate. These were the only examples of conglomerate mergers among the three samples.

Horizontal mergers were also observed among printing firms. Four of the printing sample were absorbed into larger printing groups. Vertical take-overs were also popular. Two firms were acquired by wholesalers and retailers of stationery and office equipment. Two firms were purchased by publishers.

The clothing sample had been selected to contain four hosiery manufacturers and twelve manufacturers of other forms of clothing. The three clothing companies described in table 7.3as having been acquired by manufacturers of the same product were all producers of hosiery and knitwear. The remaining three companies were all acquired by Courtaulds. This firm started life as a producer of man-made fibres, but in the 1960's and 70's made huge in-roads into textile production, and, to a lesser extent, into clothing manufacture.

3. The Fate of Acquired Firms

Footwear firms which were subject to horizontal take-overs usually continued to trade as subsidaries (8 out of 13). Only two companies were dissolved, while two became dormant and one converted to a small wholesale branch of the parent company. The two conglomerate parent companies also maintained their subsidaries as distinct firms. The wholesale and retail firms tended to absorb their acquisitions (3 dormant, 1 dissolved, 1 converted to wholesale). Only one of of the six footwear manufacturers acquired by a retail distributor continued to trade as a subsidary.

Clothing and printing firms do not display any obvious link between the type of take-over and the fate of the acquired company. All of the acquired clothing firms disappeared into their parent companies (or an intermediate subsidary). In printing, half of the acquired firms were subject to horizontal mergers, and half of these were still trading as subsidaries in 1979.

We do not know what happened to the employees and assets of acquired firms which were dissolved, converted to wholesale, or became dormant. In some cases these plants will have ceased to trade on the dissolution of their parents. Occasionally the annual report describes the break up of the assets. It seems probable, however, that in many cases these firms continued to operate as branches of their parent company.

4. Surviving Independent Firms

Out of a total corrected sample of 106 firms, twenty were still trading as independent firms in the same business in 1979.

Nine footwear firms were still operating as separate firms. Four of these had acquired subsidaries in both footwear manufacture and retail. Five companies had no records of subsidaries, although it is possible that they had acquired firms and absorbed them into their own operations. One of these five, however, had a senior associate in retail footwear, Timpsons, (itself a subsidary of the U.D.S. Group), to which it supplied a large proportion of its output. In two cases the firms' shareholders also owned other companies in footwear manufacture and retail. There remained, then, only two independent footwear firms which still, in 1979, had no obvious links with other firms operating in footwear.

Only two clothing firms had survived as independent firms to 1979. One had four subsidaries, all dormant by 1979. The other company, which was the only hosiery manufacturer in the sample not to be taken over, had the same shareholders as another hosiery company.

Nine printing firms managed to survive as independent concerns. Their experience was noticeably different from that of clothing and footwear. Only two of these firms had subsidaries in 1979. One company owned another printing firm, but the subsidary of the second firm was an investment company only. Seven firms apparently survived on their own, with the exception of one firm whose owners also owned another printing firm in the sample. This latter firm has been dissolved, and possibly its operations have been absorbed into the surviving company. Both companies operated in Gloucester.

## B. THE INDUSTRIES

### 5. Production and Employment 1950-79

Table 4 describes the employment recorded by the Census of Production in the four sectors in which most of the cooperatives operated. Data reported in later years by the Census of Production is generally more reliable. Some of the increases in employment recorded here may, therefore, be partly the result of improved coverage.

TABLE 7.4 EMPLOYMENT IN CLOTHING, FOOTWEAR AND PRINTING

| | 1948 | 1958 | 1968 | 1978 |
|---|---|---|---|---|
| Footwear Manufacturers | 111.5 | 107.2 | 94.7 | 73.3 |
| General Printing & Publishers | 167.9 | 194.7 | 204.8 | 180.6 |
| Clothing* Manufacturers | 364.2 | 421.2 | 349.9 | 311.5 |
| Hosiery and other Knitted Goods | 94.8 | 108.3 | 133.7 | 108.8 |
| | | | | Thousands |

Source: Census of Production

*In this section "clothing" does not include hosiery and knitwear.

When we look at table 7.4 it becomes clear why there were so many dissolutions before 1961 in the sample of footwear firms. During the 1950's the British footwear industry was already in decline, whereas clothing manufacturers did not start to suffer serious set-backs until the 1960's, and among printers and hosiery manufacturers the rot did not set in until the 1970's. By 1978, employment in footwear was only 66% of the figure in 1948. For clothing the decline was less serious, with employment in 1978 at 86% of the figure in 1949. General printers and manufacturers of hosiery and knitwear were actually employing more

people in 1978 than in 1948, although as with many other manufacturers, they experienced a drop in employment during the 1970's.

TABLE 7.5 PRODUCTION & IMPORTS OF FOOTWEAR (millions of pairs)

| | 1950 | 1958 | 1968 | 1979 |
|---|---|---|---|---|
| Output of U.K. footwear manufacturers | 170.0 | 166.2 | 200.8 | 149.3 |
| Imports as % of U.K. sales of pairs of footwear | 4.4 | 12.7 | 26.2 | 45.8 |

Source: B.F.M.F. "Footwear Industry Statistical Review."

Employment in the British Footwear industry has declined for two reasons. Much of the explanations lies with the huge and accelerating level of import penetration. This is not the whole story, however, for production by volume in 1979 was 88% of output in 1950, while the number of pairs produced increased between 1958 and 1968. Changes in productivity is, therefore, a second explanation of falling employment. Over the period footwear technology has changed considerably, especially with the introduction of synthetic materials and the moulding of synthetic soles. The Economists Advisory Group (E.A.G.) reported that by 1975 leather only accounted for 5% of soling materials used.[1]

In 1975 the source of the greatest number of footwear imports was Hong Kong (23% of pairs imported). Footwear from Hong Kong tended to be serving the cheaper end of the market, so that in value terms Hong Kong only produced 8% of imports. Italy was by far the largest source of imports by value (33% in 1975), followed by Spain (11%), France (9%) and then Hong Kong.[2]

The success of footwear imports are usually put down to the low labour costs in the producing countries. The E.A.G. found design to be just as important, however, especially among the more expensive imports. Availability of styles and speed of delivery were also reported by the E.A.G. as a frequent explanation given by distributors for turning to imports.[3]

TABLE 7.6 CATEGORIES OF FOOTWEAR IMPORTERS IN 1975

| | % of imported pairs |
|---|---|
| Multiples, department stores, variety and cooperative retail stores | 64 |
| Footwear manufacturers | 19 |
| Wholesalers | 8 |
| Independent Retailers | 4 |
| Mail order houses | 5 |
| Total | 100 |

Source: Footwear Industry Study Steering Group.

The estimates reproduced in table[7.6] show that it is the large retail groups that are responsible for the majority of footwear imports.

Import penetration has also increased in the clothing industry, although not to the same degree as in footwear. Clothing manufacturers have been more successful than those in footwear at increasing exports.

TABLE 7.7 SHARE OF IMPORTS IN U.K. CLOTHING SALES

| | 1962 | 1969 | 1979 |
|---|---|---|---|
| Share of imports(% on weight basis ) | 9 | 13 | 29 |

Source: O.E.C.D. (1983) "Textile and Clothing Industries."

Exports of clothing were 63% of imports in 1979. Once again, competition from countries with low labour costs is seen as a major reason for the success of import penetration in clothing sales. The O.E.C.D. believe this to be a significantly more important explanation of the decline in employment than improvements in productivity. The nature of clothing manufacture, which is highly labour intensive, with much time spent on loading and unloading fabric from sewing machines, has made technical progress slow and uneven in this sector.[4]

Hosiery and knitwear manufacturers have also had to face an expansion of imports. They have, however, been even more successful than other clothing manufacturers in boosting exports. By 1979 imports of hosiery and knitwear were 24% of the value of home consumption, while exports absorbed 19.6% of manufacturers sales.[5]

The performance of general printers is closely tied to the performance of the entire economy. The British Printing Industries Federation (B.P.I.F.) point out that much of the output from printers has "a purpose only as an adjunct to other goods and services."[6] The fall-off in employment in the 1970's can, therefore, mainly be attributed to the deepening recession throughout the economy.

Overseas trade has been marginal to the printing industry. The cost of shipping print is high in relation to its value. This has held back import penetration, as has the fact that much print makes use of local languages. The B.P.I.F. note that the widespread use of the English language has, in fact,enabled British printers to maintain a favourable trade balance in printed matter.[7] In 1976 imports amounted to only 2.4% of <u>all</u> U.K. printers' sales (i.e. newspapers, books, packaging and general printing). In the same year exports took 6.3% of U.K. printers' output.

## 6. Structure of the Manufacturing Industries

TABLE 7.8 NUMBER OF ENTERPRISES* INVOLVED IN MANUFACTURE OF CLOTHING, FOOTWEAR AND PRINTING 1958-78

| | 1958 | 1968 | 1978 |
|---|---|---|---|
| Footwear | 804 | 581 | 530 |
| General Printers and Publishers | 6643 | 7112 | 9357 |
| Clothing | 8505 | NA | 7058 |
| Hosiery and Knitwear | 1112 | 867 | 951 |

Source: Census of Production

*Enterprise = "One or more firms under common ownership or control."

Given the number of take-overs and dissolutions observed in the sample of footwear firms, it is not surprising to find that the number of enterprises manufacturing footwear has fallen dramatically over the last twenty years. (See table 7.8 ). The big drop came in the 1960's, which was a decade noted for its exceptional level of take-overs and mergers throughout manufacturing.

The E.A.G. noted the unusually high average age of footwear manufacturers. This has come about because "very few new footwear companies have been formed since the Second World War and the majority of the medium and large companies date from the nineteenth century."[8] This might be expected . Having seen the decline suffered by the industry since 1950, we would not expect this to be a sector attractive to new enterprise. Consequently, the impact of dissolutions and take-overs was not offset by company formation, and the number of enterprises rapidly decreased.

We can see from table 7.9 that footwear manufacture is dominated by small firms. More than 40% of firms employ less than 25 people. Many

TABLE 7.9 PERCENT DISTRIBUTION OF FOOTWEAR ENTERPRISES BY SIZE

| | 1958[e] | 1968 | 1978 |
|---|---|---|---|
| Number Employees per enterprise | | | |
| Less than 25 | 43.2 | 42.9 | |
| 25-49 | 10.8 | 9.0 | 77.2 |
| 50-99 | 17.3 | 14.9 | |
| 100-199 | 13.9 | 15.1 | 8.7 |
| 200-299 | 4.9 | 5.3 | |
| 300-499 | 5.1 | 5.8 | 8. 1 |
| 500-999 | 3.1 | 3.4 | 3.4 |
| 1000 and over | 1.7 | 3.6 | 2.6 |
| Total | 100 | 100 | 100 |

[e] = estimate

Source: Census of Production.

of these very small enterprises perform only part of the manufacturing process, and will sub-contract to larger firms. Between 1958 and 1968, the merger boom produced a slight shift to firms employing more than a hundred people. By 1978 this process had reversed, presumably because of the continued contraction of most firms along with the slowing down of acquisitions.

The figures for clothing manufactures quoted in tables 7.8 and 7.10 should be treated with some caution. The industry is large and fragmented, so that coverage by the Census of Production has tended to be imperfect.

It is clear from table 7.8 however, that the clothing industry is much larger than footwear, and that it has not suffered the decline in enterprises experienced by footwear. To a considerable extent the difference

TABLE 7.10 PERCENT DISTRIBUTION OF CLOTHING ENTERPRISES BY SIZE

| Number of Employees per Enterprise | Clothing Manufacturers | | | Hosiery and Knitwear | | |
|---|---|---|---|---|---|---|
| | 1958e | 1968 | 1978 | 1958e | 1968 | 1978 |
| Less than 25 | 66.5 | - | 93.5 | 45.7 | 46.5 | 83.7 |
| 25-49 | 12.8 | - | | 18.3 | 13.4 | |
| 50-99 | 10.2 | - | | 14.7 | 15.2 | |
| 100-199 | 5.6 | - | 3.3 | 9.7 | 10.8 | 7.5 |
| 200-299 | 2.1 | - | 2.0 | 4.2 | 8.0 | 4.7 |
| 300-499 | | - | | 2.9 | | |
| 500-999 | 2.9 | - | 0.7 | 3.1 | 3.5 | 2.4 |
| 1000 and over | | - | 0.6 | 1.3 | 2.7 | 1.7 |
| Total | 100 | - | 100 | 100 | 100 | 100 |

Source: Census of Production

lies in the fact that the entire clothing industry has not contracted at the same rate as footwear. A consequence of this first fact has been the continued formation of clothing manufacturers over the last thirty years. Finally, as we shall see later, many of the take-overs in clothing have been vertical rather than horizontal, as in footwear. Vertical mergers will not produce a reduction in the number of enterprises working in this sector of the industry.

It can be seen from table 7.10 that clothing manufacture is even more concentrated in small firms than footwear. 93.5% of clothing manufacturers employed less than 100 people in 1978. The proportion of small firms ($<100$) has apparently increased since 1958, although this result may appear because of improved coverage of small firms in later years.

Interestingly, hosiery and knitwear experienced a considerable decline in enterprises between 1958 and 1968, even though employment increased

over the same period (see table 7. 4.)This would indicate that horizontal mergers were important in this sector during the 1960's. The figures in Table 7 .10 support this. They show a rise from 21.2% of firms employing 100 or more people in 1958, to 25% in 1968.

Employment in hosiery and knitwear dropped back in the seventies, although the number of enterprises increased. Between 1968 and 1978, however, the number of establishments decreased. This would imply that enterprise growth was fueled by the formation of new firms, while large established enterprises cut back on employment.

Finally, we come to General Printers and Publishers, who have seen a steady increase in the number of firms operating in the industry between 1958 and 1978. The sample of printing firms suggests that mergers and take-overs have been relatively uncommon among printers, and that where they have occurred they have frequently been vertical. The industry has remained bouyant compared with clothing and footwear, so that company failures have also been less common. Meanwhile, the formation of new enterprises has apparently been responsible for the rise in the number of firms.

When measured by number of firms,general printing and publishing (of which only about 17% of employment is in publishing) had, by 1978, grown to be the largest sector of the four being discussed here. General Printers are, however, dominated by very small firms. In 1968, 83.5% of general printers and publishers employed less than 25 people, as compared with 42.9% of footwear manufacturers, 46.5% of hosiery and knitwear firms, and probably less than 70% of other clothing manufacturers.

TABLE 7.11 PERCENT DISTRIBUTION OF GENERAL PRINTING AND PUBLISHING ENTERPRISES BY SIZE

| Number of Employees per enterprise | 1958 | 1968 | 1978 |
|---|---|---|---|
| Less than 25 | 80.9 | 83.5 | 97.6 |
| 25-49 | 8.5 | 7.6 | |
| 50-99 | 5.4 | 4.7 | |
| 100-199 | 3.1 | 2.1 | 1.2 |
| 200-299 | 0.9 | 1.4 | 0.7 |
| 300-499 | 0.6 | | |
| 500-999 | 0.4 | 0.5 | 0.4 |
| 1000 and over | 0.2 | 0.3 | 0.2 |
| Total | 100 | 100 | 100 |

Source: Census of Production.

The dominance of small firms has increased over time. In 1958 5.2% of firms employed more than one hundred people. By 1978 this figure had fallen to 2.5%

## 7. Structure of Distribution in the Industries

Both footwear and clothing distribution has experienced a massive shift away from the small independent retailers since 1950. Increasingly they have been replaced by multiple retail chains, department stores and "variety" stores such as British Homes Stores and Marks and Spencers.

Tables 7.12 & 7.13 describe the structure of distribution in the 1970's. "Clothing" incorporates hosiery and knitwear in this section.

We can see from table 7.12that multiples(including department and variety stores) dominate both footwear and clothing distribution. The share taken by multiples increased in all three sectors between 1973

TABLE 7.12 TURNOVER BY TYPE OF OUTLET IN FOOTWEAR & CLOTHING £Millions

| | Footwear | | Mens' and boys' wear | | Women and Girls' wear | |
|---|---|---|---|---|---|---|
| | 1973 | 1976 | 1973 | 1976 | 1973 | 1976 |
| Multiples* | 294 | 462 | 316 | 422 | 1180 | 1955 |
| Independents | 137 | 190 | 288 | 369 | 786 | 1055 |
| Cooperative Retail Stores | 8 | 10 | 8 | 10 | 29 | 40 |
| All Retailers | 439 | 662 | 612 | 801 | 1995 | 3050 |

*Multiples = 10 or more outlets

Source: The Economist Intelligence Unit. "Retail Business".

TABLE 7.13 TURNOVER BY SIZE OF OUTLET 1979 £ Millions

| | Small Businesses | Large Businesses |
|---|---|---|
| Footwear Shops | 275 | 840 |
| Men's Wear Shops | 475 | 705 |
| Women's Wear Shops | 1540 | 1045 |
| Total | 2290 | 2590 |

Source: "Retail Business."

"Small" businesses have a turnover of less than £5million at 1976 prices.

and 1976. The greatest increase was in women's and girls' wear, rising from 59.1% of turnover in 1973 to 64.1% in 1976.

The multiples held the greatest share in footwear, 69.8% of turnover in 1976. Women's and girls' wear was catching up at 64.1% in 1976, with Men's and Boy's wear at 52.7%.

Some multiples, however, may be relatively small. Table 7.13 demonstrates the degree to which footwear distribution was dominated by large businesses.

75% of footwear was sold through large businesses in 1979. The equivalent figure for men's wear was 60%, and for women's wear only 40%.

There is, of course, no equivalent distribution sector for printing. Outlets for printing are very diverse, and probably include most sectors of the economy.

## 8. Concentration in the Industries

The footwear industry is generally considered to be one of the more competitive sectors of the economy. Goodman remarked that "a major feature of the industry...is its low level of concentration."[9] Even so, the 1978 Census of Production reported that the five largest footwear manufacturers produced 33% of the "sales and work done" by British footwear firms.

The true nature of concentration in British footwear is not revealed, however, until we consider footwear distribution.

The British Shoe Corporation Ltd (B.S.C.) operated the following chains in 1978 - Freeman, Hardy & Willis; Saxone, Lilley and Skinner; Trueform; Curtess; Dolcis and Manfield. In all, B.S.C. had 1742 outlets in the U.K. in 1978 and supplied roughly 20% of the market.[10] Furthermore, B.S.C. is a subsidary of Sears Holdings Ltd., which also owns Selfridges, another outlet for shoes. B.S.C. focuses on the fashion market, with particular emphasis on the 15-25 age group. In this segment of the market it has control of considerably more than 20% of the market.[11] Through its manufacturing subsidary, B.S.C. Footwear Ltd., B.S.C. produces about 50% of its turnover.[12]

The British Shoe Corporation is by far the largest footwear retailer in Britain. In 1978 the next largest, Great Universal Stores, was only one-quarter the size of B.S.C.[13] The Economists Advisory Group estimated, however, that in 1974 the top 15 footwear retailers controlled 40% of the market.[14]

Concentration in the clothing industry is less easy to assess. Many manufacturers operate in a clearly defined sub-group of the industry e.g. mens outerwear. On the other hand, some firms supply several clothing sectors, and it is not impossible for manufacturers to swap production between sectors. On the whole, clothing manufacture does appear to be considerably less concentrated than footwear.

The O.E.C.D. recorded that the largest 100 firms operating in U.K. clothing manufacture in 1973 accounted for 8.7% of U.K. output.[15] The clothing cooperatives operated in three sectors, i.e. "Mens and Boys Tailored Outerwear," "Dresses Lingerie and Infants Wear" and "Hosiery and other Knitted Goods." The 1978 Census of Production reported that the top five enterprises in these sectors produced, respectively, 19%, 18% and 34% of "total sales and work done by the sector.

We saw in table 7.12that clothing distribution, like footwear, is increasingly dominated by the multiple retail stores. The domination by large retail firms is still apparently less severe than in footwear, and certainly there appears to be no equivalent to the B.S.C. in clothing distribution.

We have already discussed the highly diverse structure of the printing industry. Among General Printers and Publishers concentration is very low. In 1978 the five largest firms only produced 10% of the sales and work done by General Printers.[16] Outlets for printers are probably more widespread than for any other type of manufacturing.

FOOTNOTES TO CHAPTER 7

1. ECONOMISTS ADVISORY GROUP (1977). Report prepared for the DEPARTMENT OF INDUSTRY, FOOTWEAR INDUSTRY STUDY STEERING GROUP, 'British Footwear - The Future,", Volume 2, "The Industry."

2. ECONOMISTS ADVISORY GROUP (1977). As above, Volume 2.

3. ECONOMISTS ADVISORY GROUP (1977), As above, Volume 3, "The Domestic Market."

4. O.E.C.D. (1983) "Textile and Clothing Industries: Structural Problems and Policies in O.E.C.D. Countries."

5. NATIONAL ECONOMIC DEVELOPMENT COUNCIL (1981) KNITTING S.W.P. "Progress Report."

6. BRITISH PRINTING INDUSTRIES FEDERATION (1979) "The Economy and the Printing Industry."

7. BRITISH PRINTING INDUSTRIES FEDERATION (1979)

8. ECONOMISTS ADVISORY GROUP (1977) As above, Volume 2.

9. GOODMAN, J.F.B. (1977). "Rule Making and Industrial Peace - Industrial Relations in the Footwear Industry." Croom Helm.

10. PRICE COMMISSION (1978) "Prices, Costs and Margins in the Distribution of Footwear in the United Kingdom." H.M.S.O.

11. ECONOMISTS ADVISORY GROUP (1977), As above, Volume 3.

12. PRICE COMMISSION (1978). As above.

13. PRICE COMMISSION (1978). As above.

14. ECONOMISTS ADVISORY GROUP (1977), As above. Volume 3.

15. O.E.C.D.(1983). As above.

16. CENSUS OF PRODUCTION. "Business Monitor: Summary Tables."

# CHAPTER 8

## COMPARING THE BEHAVIOUR OF COOPERATIVES AND CAPITALIST FIRMS

In the last chapter we saw how central company take-overs were to the experience of clothing and footwear firms since 1950. This chapter begins by contrasting the experience of cooperatives, and discusses why cooperatives did not follow a similar path. What, if anything, did cooperatives lose by remaining outside of the merger boom? To answer this, we consider why capitalist firms were so preoccupied with acquisitions. In the final sections we will return to reconsider the comparisons made between cooperatives and capitalist firms in chapters 4, 5 and 6 .

### 1. Why didn't Cooperatives Participate in Acquisitions?

None of the cooperatives under study either acquired enterprises or were acquired between 1950 and 1979. One cooperative, Birmingham Printers, transferred its assets to another printing cooperative.

In this section we ask three questions. (i) Why were none of the cooperatives acquired by capitalist firms? (ii) Why did none of the cooperatives take over capitalist firms? (iii) Why did none of the cooperatives acquire or merge with other cooperatives?

Under law (Industrial and Provident Societies Act), any corporate body may hold shares in a cooperative.[1] In theory, then C.F.'s may acquire cooperative shares. In practice, the only corporate bodies holding shares in the cooperatives were other societies and trade unions. Why was this?

The most straight-forward answer is that cooperative rules often exclude companies from membership. Secondly, the maximum shareholding

which could be held by any individual or corporate body (other than another society) was £1000.[2] This maximum was raised to £5000 in 1975. Therefore, it was impossible under law for a company to own all the shares of a cooperative. Furthermore, unlike companies, cooperatives pay a fixed rate of interest on shares so that an associate company could not absorb the profits of its junior associate (the cooperative) through the payment of share dividends.

Section 52 of the Industrial and Provident Societies Act, 1965, allows a society to amalgamate with or transfer its engagements to a company. In order to do so, a special resolution must be passed by three quarters of the membership. Cooperative shares may, however, only be transferred at their nominal value. Therefore, unless the cooperative was in dire straits, members would lose out by selling the assets of the cooperative at their nominal value to a potential purchaser. Even when liquidation becomes inevitable members may prefer to break up their assets and sell them individually for a higher value. We might also expect employee members to vote against such a transfer when it might put their own jobs, and control of those jobs, at risk.

Next we come to the question, why did none of the cooperatives acquire capitalist enterprises? It is perfectly legal for a cooperative to own subsidaries. Indeed, it is quite common for the Cooperative Wholesale Society to have subsidary retail societies. Why then, did producer cooperatives not make acquisitions? One probable answer is the method by which most take-overs are financed. The vast majority of take-overs are settled by an exchange of shares. Prais has documented the rapid rise of share issues for acquisitions. He found that in 1970, 77.6% of take-overs were funded by securities.[3]

There is nothing to stop cooperatives issuing shares in payment for a company that they would like to purchase. It is unlikely, however, that the owners of the company would wish to acquire shares which may not be transferred, may only be redeemed at their nominal value, and pay a fixed rate of interest which has usually been below the rate of inflation. Furthermore, as we noted earlier, one owner could not receive more than £5000 worth of shares(and only £1000 prior to 1975)

Finally, cooperatives face a risk when they issue shares that is not met by companies. Cooperative shares may be redeemed at any time. The former owners of the acquired company could, therefore, demand cash in exchange for shares whenever they wished. If they did so the cooperative would probably find itself facing severe liquidity problems. Shares in limited companies are quite different. Such shares cannot be returned to the issuing company and exchanged for cash. The holders of shares can only liquidate them by selling them to other organisations or individuals. Consequently, capitalist firms do not open themselves to the same risk of a liquidity crisis when they issue shares.

Frequently companies buy other companies with poor profit records at a knock down price. Even though profits may be low, the low rate paid for shares will make the rate of return on the investment worthwhile. If cooperatives followed a policy of profit sharing among all employees, including those who came with the company, then acquiring an unprofitable company would make the cooperative members worse off. Cooperatives, therefore, would have little motive for taking over unsuccessful firms, and could not afford to acquire prosperous companies.

The last question concerns the absence of amalgamations between cooperatives. One cooperative did "transfer its engagements" to an existing cooperative. However, such a transfer, only requires the transfer

of assets and obligations, it does not guarantee the employment of cooperative members. All that the members are certain to receive on such a transfer is the nominal value of their shareholdings. It is perfectly possible, however, for cooperatives to amalgamate their operations. Why they chose not to do so is not immediately clear. In the next section we will ask what were the benefits to capitalist firms from mergers. This might help to explain the lack of such activities among producer cooperatives.

## 2. What was the Motive for Take-Overs among Clothing, Footwear and Printing Firms?

There has been a vast amount of research into company take-overs. Unfortunately, the industries in which we are interested have not been well documented. Understandably, interest has been concentrated on the kind of giant firms which are not usually found among clothing, printing and footwear manufacturers. These giants not only tend to be seen as more important, but information on their activities is much more readily available. Most studies of take-overs have been limited to quoted companies. A few studies have looked at a broader spectrum, but in these cases clothing and footwear have usually been lumped together, while printing has been combined with paper and publishing - industries which are considerably more concentrated.

Apart from a small number of case-studies, research into acquisitions and concentration has also tended to focus on intra-industry acquisitions. This method misses vertical acquisitions and, although horizontal mergers were important among our sample of capitalist firms, it will be suggested that to understand the growth in horizontal acquisitions we must be aware of what was happening in the sectors supplying and purchasing from these firms.

Why do firms merge with, or take over, other firms? A frequent answer is, for the benefits of production economies of scale. Does this answer hold up for the three industries under discussion? Not at all. Nearly all footwear subsidaries have continued to operate as separate plants. We have already observed (Chapter 6, table 6.4) that Pratten and Dean found economies of scale to be minimal in footwear manufacture.[4] The Economists Advisory Group also observed that

> "it seems generally agreed that production economies of scale.... are not very great beyond 1,200 pairs a day(that is an establishment employing about 150) and that at much beyond this level diseconomies may set in." 5

Among clothing manufacture economies of scale are even less important. The O.E.C.D. report a study by Elliot and Gleed which "found the minimum efficient plant size to be well below 1% of output for all branches of clothing."[6]

The main source of economies of scale in general printing is the size of the print run. The British Printing Industries Federation observed that many general printing orders are relatively small in size, and so there is little to be gained from the technical advantage of large scale production.[7]

Hosiery and knitwear is the only sector in which economies of scale have apparently been important. Hart, Utton and Walshe suggest that "technological innovation promoted scale economies."[8] They quote a report in the 'Hosiery Times' that indicated that "due to the advent of larger machines, the trend in the knitwear industry is towards larger groups."[9]

Economies of scale cannot, therefore, explain the boom in acquisitions. We must search for alternative explanations. Each industry will be considered in turn.

a) Footwear

The British Shoe Corporation was formed in 1956. In that year Sears Holdings Ltd., which already owned Freeman, Hardy & Willis, True-Form, Phillips Brothers Character Shoes and Curtess Shoes, took over Manfield and Dolcis. Out of this group the British Shoe Corporation emerged. As the directors of Dolcis observed in their annual report for 1956, "the year witnessed a major change in the structure of the retail footwear trade in the United Kingdom."

British Shoe manufacturers found themselves facing an exceptionally powerful organisation when they tried to sell their products. The Economists Advisory Group have documented in detail the control which B.S.C. exerts over the manufacturers.

> "Smaller made-to-order firms, especially those in woman's shoes, claim to be under heavy pressure to reduce prices. They are told (by B.S.C.) what price ticket the product is to sell at and, therefore, what price B.S.C. will purchase at. There is no flexibility in this price....Whilst manufacturers are allowed to look for export sales or even some mail order business, they are discouraged from supplying other multiples...This discouragement, we were told, may take the form of an implied threat by B.S.C. to reduce or stop purchases from that manufacturer." 10

Even if footwear manufacturers are able to secure outlets other than B.S.C., the buying power of other multiples is also considerable and growing in importance.[11]

The manufacturers constantly face the threat that the multiple retailers will substitute imports if they cannot provide footwear at the price offered by the multiples. We saw in chapter 7, table 7.6, that it is the multiple retailers that are responsible for the majority of imports. B.S.C. imports 50% of its turnover.

Ironically, in footwear distribution, imports actually bolster the monopoly power of the large retailers. Usually imports are seen as a constraint on domestic monopolies.

How have footwear manufacturers responded to the growing concentration of distribution? Goodman believes that this concentration

> "led many of the larger manufacturers to increase the security of their outlets either by increasing their direct involvement in retailing, or by strengthening their franchise arrangements with retailers." 12.

Our sample of surviving independent footwear firms supports this view. Most of the companies owned, or had links with, retail outlets. Goodman observes that this

> "strategy of forward integration to secure control of outlets is largely unavailable to the small manufacturers, and even the larger manufacturers, unless they can produce the whole range of footwear competitively." 13

This, then, would appear to be one explanation of the growth in horizontal mergers. In order to maintain their own retail outlets, firms had to be large enough to produce the full range of footwear. Secondly, in order to try to tip back the balance of bargaining power with the distributors, manufacturers might be expected to resort to horizontal acquisitions. Furthermore, with footwear manufacture in decline, growth through investment would have been very hazardous. Horizontal mergers bring about not only the merging of productive capacity, but more importantly, the merging of existing outlets.

(b) Clothing

Several studies have noted the growing concentration in textile production and how this has also been manifested in forward integration into clothing manufacture.

Utton made a study of diversification in manufacturing industries. He found that the most diversified sector of U.K. manufacturing was the combined orders Coal and Petroleum Products plus Chemicals and Allied Products. The next most diversified group was textiles. Nearly half of textile enterprise employment outside of their primary order was in the Clothing and Footwear Industry. "A large part of the latter is probably accounted for by Courtaulds' forward vertical integration by merger into the clothing industry to protect its outlets for cellulosic fibre."[16]

The O.E.C.D. observed the same process of forward integration by fibre producers in nearly all of its member countries. The movement was strongest, however, in the U.K. By 1976 the five largest British textile firms accounted for more than half of textile employment.[17]

During the 1960's and early 1970's Courtaulds continuously acquired textile and clothing manufacturers. Cowling et al document sixty acquisitions by Courtaulds between 1963 and 1974. In their study, Hart et al suggest that economies of sale in textile production may have been a partial spur to Courtaulds' expansion, but, like Utton, they believe the major motive to have been to make outlets secure. Hart et al describe how Courtaulds had tried to sell its own elastomeric, Spanzelle, to Clutsom-Penn International. It was unsuccessful, Clutsom imported Lycra from DuPont. Clutsom was taken over by Courtaulds in 1968.[19] Courtaulds drive to secure outlets was probably all the more

determined because of the strength of some of its competitors in fibres, among them I.C.I.

We must assume that Courtaulds' onward expansion into clothing manufacture (although this was far less significant than the move into textiles) was a further attempt to make its outlets more secure. Except for such vertical acquisitions, the O.E.C.D. report that pressures for concentration in clothing were weak. They remark that

> "technological advance did not substantially increase the range of scale economies ... Rapidly changing fashions and hence short production runs (ensures that) flexibility in adjusting output tends to outweigh cost reductions arising from the use of specialised equipment."[20]

Furthermore, clothing manufacturers did not apparently face the degree of concentration in distribution as was faced by footwear producers. Undoubtedly there has been a growing move towards multiple retailing in clothing as with footwear. But we saw in Chapter 7, Tables 7.12 and 7.13 that clothing distribution is still considerably more fragmented than footwear. In 1980 the I.C.C. report on clothing manufacturers commented that, "in clothing the partnership (between manufacturers and retailers) appears to be fairly equal, with both sides having achieved good profits and growth over the last few years."[21] I.C.C. use the figures reported in Table 8.1 to support their observation.

TABLE 8.1 AVERAGE RETURN ON CAPITAL AMONG CLOTHING MANUFACTURERS AND RETAILERS

| | 1979/78 | 1978/77 | 1977/76 |
|---|---|---|---|
| Clothing Manufacturers | 21 | 24 | 23 |
| Clothing Retailers | 21 | 23 | 19 |
| | Percentages | | |

Source: I.C.C. Business Ratio Report (1980): Clothing Manufacturers.

It would appear that horizontal mergers were not a major determinant of the structure of clothing manufacturing over the last thirty years. Hosiery and knitwear is the one exception. Hart et al quote "knitted outerwear" as an example of a trade in which concentration increased as a result of mergers. Integration forward by fibre manufacturers was again important. By 1968 three of the top five manufacturers of hosiery and knitwear were primarily fibre producers.[22] Courtaulds, of course, was the largest. Horizontal expansion was also important, particularly by Nottingham Manufacturing, which acquired one of the hosiery firms in the sample of clothing C.F.'s.

Hart et al explain the merger wave by

> "The need to countervail the power of large buyers which resulted from internal and external growth of retailers ... Secondly, there is a suggestion that technological innovation promoted scale economies." 23

Cowling et al put forward another explanation of Courtaulds' rapid expansion into clothing and textiles. They suggest that "it was an instrument by which its dominant position could be secured by political influence."[24] In particular, Courtaulds used its power to ensure that imports of fibres and textiles were restricted by government policies.

> "Courtaulds have been quite open about their attempts to secure a more restrictive import policy for textiles and have linked their acquisition of a dominant position in textiles to the achievement of this aim. Arthur Knight, their current chairman, explains that the acquisition of one third of the Lancashire textile industry was "necessary to have any prospect of influencing government attitudes about imports."" 25

It is interesting to contrast the role of Courtaulds with that of the B.S.C. Not until 1977, following recommendations by the Footwear

Industry Study Steering Group (F.I.S.S.G.), were any restrictions placed on the import of footwear into the U.K. Tariffs on the import of fibres have existed since the 1950's. We have seen that B.S.C. profited from the import of footwear, even though it was very damaging to footwear manufacturers. We may speculate that B.S.C. was using its very considerable power to prevent the introduction of restrictions on footwear imports.

(c) Printing

Why were printing firms less prone to take-overs than those in footwear and clothing? The answer probably lies in the structure of the demand for the product. We have noted the very diversified and fragmented demand for print. The British Printing Industries Federation point out that the

> "bespoke nature of the product limits the technical advantage obtained from large scale production, and there is often a strong marketing advantage arising from local knowledge of customers and from geographical contiguity between printer and customer." 26

The structure of printing outlets was apparently such that small printers could continue to find buyers for their product. Consequently there was no great pressure towards horizontal amalgamations.

3. Cooperative Outlets

Our survey of capitalist firms suggests that one of their major concerns is to secure outlets for their products. In the case of Courtaulds, battling against other giant fibre producers, and imports, this was achieved by forward integration. Similarly, some footwear manufacturers acquired or opened retail outlets. Other manufacturers,

both in clothing (especially hosiery and knitwear) and footwear, resorted to horizontal expansion in order to strengthen their position vis a vis the distributors. Printers, on the other hand, faced such a diversified demand for their product, that they were able to survive without forming permanent links with their outlets.

Producer cooperatives faced a similar struggle to secure outlets. Traditionally, the footwear and clothing cooperatives enjoyed the protection of regular orders from the Cooperative Retail and Wholesale Societies. Since their formation, the C.P.F. Cooperatives enjoyed close links with cooperative distributors. All three categories of cooperative were members of the Cooperative Union, and producer cooperatives were given priority in the buying policies of other cooperatives. The printing cooperatives were not so tied in with cooperative distribution. Traditionally they did work for both cooperatives and trade unions, but as with capitalist printers, they tended to supply a variety of customers.

In the mid 1960's cooperative distribution underwent a radical overhaul. Cooperative retailers were facing increasing competition from the growth of large supermarket chains. The response of the cooperatives was to convert the retail societies (C.R.S.) into a similar homogeneous chain of stores.

Although the Cooperative Wholesale Society (C.W.S.) had been in existence for many years, the C.R.S. were free to purchase from whomever they pleased. Many, of course, purchased from the C.P.F. cooperatives. Consequently, one C.R.S. might offer a very different range of products from its neighbour. Each retail society was autonomous, and therefore failed to benefit from bulk purchasing.

The"Cooperative Wholesale Marketing Scheme" was introduced in 1963 to remove these weaknesses. Under this scheme, C.R.S. were encouraged to amalgamate and many were taken over by the C.W.S. Secondly, the C.R.S. were requested to make all their purchases from the C.W.S. so that the same products would be available in all stores, and so that they could benefit from scale economies in distribution.

The effect of the Marketing Schemes on the cooperative producers can be illustrated by comments drawn from their annual reports. In 1965 Toy Town Shoes reported "a fall off in co-op trade". An "unprecedented slump in sales" followed in 1967. Toy Town Shoes went into liquidation in 1969. Kaycee Clothing reported that "Marketing Schemes are steadily encroaching on sales to the Cooperative Market" (Annual Report 1966). In 1967 Kaycee Clothing reported that

> "C.W.S. Marketing Schemes now control virtually 80% of all trade in menswear in our major outlets. This is having a serious effect on our trading potential. The future depends on our ability to find new markets."

In 1970

> "the continuing amalgamation of Cooperative Societies has resulted in a reduction of orders in the second half of the year."

Kaycee Clothing went into liquidation in 1974.

The experience of Kaycee Clothing may be contrasted with that of Ideal Clothiers. The cooperative reported a decrease in sales in 1967 due to "an increase in the garments covered by Marketing Schemes", also

> "a steadily increasing part of trade with the C.R.S. is covered by Marketing Schemes which are not profitable. It is therefore vital to find new sales outlets. New trade almost doubled in the last year, and exports are up 50% on the total for last year."

Later reports continued to emphasise Ideal Clothiers success in finding alternati

outlets. Ideal Clothiers was still trading in 1979. Unfortunately there is no evidence as to why Ideal Clothiers was more successful in finding new markets than Kaycee Clothing.

Similarly, although in 1970 Derby Printers reported that "trade fell off, mainly due to amalgamations within the Co-op Movement." Derby Printers survived until 1979 by turning to other customers.

There is no doubt that the Marketing Schemes hit the C.P.F. cooperatives badly. The cooperatives survived if they were able to find other outlets or become one of the selected suppliers to the Marketing Schemes. We may note from the comments by Ideal Clothiers that, although they complained about the poor profits available from the Marketing Scheme, they were apparently one of the lucky cooperatives selected to supply these schemes, and by 1973 they were able to report an increase in cooperative trade. This probably goes far to explain their survival. Queen Eleanor, another surviving clothing cooperative, continued to report a significant amount of cooperative trade into the 1970's.

Printers were able to survive because their output had never been so concentrated on the cooperative market, while the opportunity for finding alternative outlets was much better.

## 4. Re-Assessing the Performance of Cooperatives

Chapters 4, 5 and 6 compared the performance of cooperatives with the sample of capitalist firms. The comparisons were based on a neo-classical perception of how the capitalist economy operates. In this section we will reconsider the results in the light of the evidence presented in this and the last chapters.

(a) Short-Run Behaviour

In Chapter 4 we found that most cooperatives increased their labour force at the same time as capitalist firms. Neoclassical theory predicted the opposite. Even modified versions of the neoclassical analysis predicted, at most, that cooperatives would hold their labour force steady when capitalist firms expanded.

So why did most cooperatives behave just like C.F.'s? Presumably to hold on to existing outlets. The E.A.G. reported that a frequent explanation given by distributors for turning to imports was "availability of styles and speed of delivery." (Chapter 7, Section 5). One can just imagine the response of the B.S.C. or the C.W.S. when, on asking for an expansion of orders, the cooperative replied that it had decided to cut back on production. If the cooperatives cannot provide the range and number of orders requested by the purchaser they will no doubt soon lose their custom to willing competitors.

(b) Survival

The literature contains a number of alternative explanations of co-operative failure, but as we saw in Chapter 6, none of these appeared to fit the evidence. Furthermore, none of these offered any ideas on why printing and clothing coops survived much better than those in footwear. (See Table5.1 Chapter 5). Here we suggest that the survival of both cooperatives and capitalist firms depends on three factors:-

(i) The general performance of the industry

(ii) The enterprise's position within that industry

(iii) The enterprise's access to outlets, and the structure of the sector purchasing the product.

Let us first consider (i), general performance of the industry. The footwear industry has been in severe decline since the 1950's, much more so than either printing or clothing. It is no surprise, then,to find that footwear cooperatives failed much more frequently than those in clothing and printing.

The state of the footwear industry is not, however, sufficient explanation for the low survival of footwear cooperatives. It does not tell us why a smaller proportion of footwear cooperatives survived than C.F.'s.(Table 5.3, Chapter 5). Now we must compare the different strategies used to secure outlets. Capitalist firms forged links with footwear retailers by (i) acquiring their own retail outlets; (ii) Becoming a subsidary of a footwear retailer; (iii) Franchise agreements, often made more secure by broadening their bargaining power and range of products through horizontal integration. Cooperatives followed none of these procedures for the reasons outlined in Section 1.

The role of the C.R.S. and C.W.S. may help to explain why cooperatives did not resort to amalgamation with fellow cooperatives. For a long time producer cooperatives enjoyed secure outlets. Since economies of scale were not important in their industries, they had no motive for amalgamation. The effect of the Marketing Schemes began to hit many cooperatives in the second half of the 1960's. By then most of the footwear outlets had already been sewn up by the fast expanding footwear manufacturing groups. For most cooperatives it was too late to fight back, and their experience of marketing outside of the cooperative network was very limited.

Clothing cooperatives, on the other hand, did much better than their capitalist counterparts. Here factors (ii) and (iii) come into

play. First we must remember that the clothing cooperatives were exceptionally large compared with the industry average. In 1950 they employed 1192 (Kaycee Clothing), 1273 (Ideal Clothiers), 155 (Queen Eleanor) and 90 (Wigston Hosiers). Only Wigston Hosiers was average for its sector. Hosiery and knitwear manufacturers tended to be larger than other clothing sectors.

Queen Eleanor and Ideal Clothiers survived until 1979. How did they manage it? They did so by securing orders from the Cooperative Wholesale Marketing Schemes and thereby maintaining a share of their cooperative outlets, and secondly by finding new outlets. They were more successful in this than footwear cooperatives because of their relative size within their industry, and because clothing distribution, although increasingly concentrated, was still much less so than footwear.

Finally we come to printing cooperatives, which displayed a better survival rate than capitalist printing firms. The printing cooperatives were of average size for their industry. They faced a large and diverse demand for their output, and since few printing firms took part in either horizontal or forward take-overs, the cooperative printers were not at any great disadvantage compared with capitalist firms. In other words, conditions were very similar for capitalist and cooperative printers.

The printing cooperatives, unlike clothing and footwear coops, were not squeezed out of markets by the expansionary policies of capitalist firms, nor were they small relative to the majority of firms in their industry. The printing cooperatives might be seen as the only coops in our sample that competed on equal terms with their capitalist counterparts, and as we have seen, they actually survived better than the sample of

printing firms. This leads one to wonder whether, all other things being equal, cooperatives would on average survive longer than capitalist firms.

(c) Growth and Employment Creation

Cooperatives appear to have been slightly less successful than C.F.'s in maintaining employment (Section 4, Chapter 5), although statistically there was no significant difference between footwear cooperatives and C.F.'s.

It is clear, however, that many firms have managed to maintain employment by becoming subsidaries, while both subsidaries and independent firms have grown by acquiring other firms. We do not know how far growth among the sample of C.F.'s was fueled by acquisition of subsidaries. Meeks found, however, that between 1964 and 1971 the acquisition of subsidaries accounted for over 50% of the growth in net assets of all U.K. quoted companies.[27] None of this growth creates new employment, and may well decrease employment if the acquiring firm does not maintain the subsidary at its full capacity.

Against this result we must put the fact that those firms acquired and then dissolved or dormant, may still exist physically as a branch of the parent company. The results in Table 5.7 Chapter 5, do not include employment in C.F.'s maintained in this way. Five of the thirteen acquired footwear manufacturers ceased to trade as manufacturing subsidaries, while footwear subsidaries formed 62% of firms surviving in 1979. In theory, then, the employment maintained by capitalist footwear firms could have been almost 40% more than the figure quoted in Table 5.7 of Chapter 5.

These comments leave us no clearer about the relative employment creating capacities of cooperatives and capitalist firms. It was suggested in the previous section, however, that clothing and footwear cooperatives were put at a disadvantage as compared with capitalist firms as a result of the numerous acquisitions in these industries. If the cooperatives had not faced growing concentration in their sectors, they may have been able to maintain a higher level of employment.

## 5. Does the Neoclassical Analysis Assist our Understanding of Capitalism or Labour-Management?

Our study of clothing, printing and footwear firms has created a picture of take-overs and growing concentration in both production and distribution. These industries are certainly not unique. In fact they have probably been less prone to this process than most other sectors. This discovery is hardly anything new. Since the time of Marx, people have predicted and described the growing concentration of capitalist industry. Why then have commentators on labour-management (along with many others) clung so tenaciously to the neo-classical model?

The answer which is usually given is - yes, neoclassical models may not capture every component of the capitalist economy, but they do predict the direction of change. Isn't this true? Have we not seen in Chapter 4 that capitalist firms tend to expand in times of increased aggregate demand, and do the reverse in periods of recession. Of course, if a model of the economy failed to make even one correct prediction about the behaviour of the participants in the system, even its supporters might have difficulty in justifying its existence. Inevitably, then, the neoclassical analysis had to include some predictions which appeared

to fit the evidence. This is not to say that other forms of analysis could not equally have confirmed those predictions, and been much more successful in predicting other aspects of the economy.

The failure of the neoclassical model is highlighted once it is translated to an analysis of labour-management. The neoclassical model of the short-run produced results which economists were trying to explain away even before testing the predictions empirically. Few people actually expected to find labour-managed firms that contracted when demand expanded. But, as we saw in Chapter 4, even the adapted versions of the short-run analysis failed to describe the actual behaviour of the cooperatives.

If the neoclassical analysis of labour-management has any value, it is its role in highlighting the failure of the neoclassical model to get to grips with the dominant forces working in a market economy (both capitalist and labour-managed). This is not to suggest that the neoclassical model has failed. If its role was to cover up a system of exploitation and inequalities by describing it as one of harmony and fair returns for services provided, then the neoclassical model has been a great success.

Where does the neoclassical model deviate from the realities of a capitalist system? As Aaronovitch and Sawyer point out,

> "the model of perfect competition is not able to explain how oligopoly arises, in the sense that there is no mechanism in the theory by which an industry of many firms changes into one dominated by a few firms." 28

Why, they ask, should any firm go through all the bother and cost of acquiring other firms for short-run monopolistic profits, when, in the long run, these profits must inevitably disappear (according to neoclassical theory).

The neoclassical explanations of firm growth is exogenous to the firm, e.g. increased demand, reduced costs or changing technology. Only the latter can explain growth through acquisitions rather than internal investment. If two firms merge this does not add to the total product and satisfy growth in demand.

What of technical change? Our own sample of firms displayed almost no evidence of growth motivated by a pursuit of production economies of scale. Aaronovitch and Sawyer, along with many other authors, have found this conclusion to hold true across most industries.[29] Furthermore, as we shall see in Chapter 9, technical change is not unbiased. In a capitalist system, if firms benefit from being large, then technical change will inevitably be biased towards large production units.

The neoclassical model is one of harmony. Under perfect competition real competition virtually does not exist, all firms merely accept the given price and manufacture contentedly alongside similar firms. The only competition is to maximise efficiency and so minimise costs. All firms can sell their product if they offer it at the market price.

In reality it is difficult for a firm to sell its product when all its outlets are owned by another manufacturer of the same product. We saw that Du Pont, presumably by offering the best price, secured the custom of Clutsom-Penn International. Courtaulds managed to win Clutsom's custom from Du Pont. How was this achieved? Did Courtaulds endeavour to improve its efficiency and offer its product at a lower price than Du Pont? No, Courtaulds merely acquired Clutsom and secured it as an outlet.

The above example brings us to another quality of the neoclassical analysis. That is the image that it creates of firms pursuing their individual advantage, and by doing so, benefiting all participants in the economy. Courtaulds' acquisition of Clutsom did not bring cheaper clothes to the consumer. Nor does the monopoly power of B.S.C. with its exceptionally high profit margins, benefit either the consumer or the struggling manufacturers.

Aaronovitch and Sawyer describe a system of intense and continuous rivalry between firms. In their system there is no tendency towards an equilibrium in which firms operate together in harmony. According to Aaronvitch and Sawyer, firms struggle to grow large in order to enjoy both the benefits of market power and political influence. By doing so they transfer income from both consumers and other firms to themselves.

> "Many of the gains accruing to the larger firm do not correspond to any social gains. It is rather that the size and bargaining strength of the firms determine the division of spoils, rather than increase the total spoils." 30

The neoclassical analysis denies both the long-run persistence of profits and the struggle over the division of the surplus between wages and profits. In the next chapter it will be argued that , because of this, neoclassical methods fail to capture the important differences between capitalist and labour managed systems.

FOOTNOTES TO CHAPTER 8

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# PART C:

# THE LABOUR MANAGED ECONOMY

# CHAPTER 9

## A CRITICISM OF NEOCLASSICAL THEORIES OF THE LABOUR-MANAGED ECONOMY

In this chapter I argue that the neoclassical model leads to both contradictory and incorrect conclusions about the performance of the labour-managed economy (L.M.E.). This is because the neoclassical model ignores a characteristic of capitalism which has long been a driving force behind the call for labour-management, namely the exploitation of labour.

The majority of the published theory of the economic behaviour of the labour-managed economy starts from a neoclassical perspective. Fundamental to this perspective are the following:

(i) A labour supply curve.

(ii) Continuous and concave production functions.

Using these tools the neoclassical method creates a model of capitalism in which General Equilibrium is seen as the most desired economic goal. General Equilibrium is both the most "efficient" and "just" economic solution. It is efficient because all firms produce at the point of minimum average cost, and just because each factor of production receives its marginal product. Consequently Pareto Optimality is considered the ultimate test to be inflicted on any proposed economic order.

Application of the neoclassical method to labour-management has led to two very contradictory conclusions about the L.M.E. They are:

(i) The L.M.E. will be inefficient because of a misallocation of resources between firms. This is caused by the labour market not clearing, and labour earning different incomes in different firms.[1]

(ii) The L.M.E. will be just as efficient as a capitalist economy under General Equilibrium. At this point both systems will be Pareto Optimal.[2]

Why are these conclusions so different? The answer is that the first refers to a situation in which both the L.M.E. and a capitalist economy would be inefficient by Pareto's standards. Apparently the entry of new firms has not competed away inequalities in the system. The resulting misallocation of resources will be reflected in the capitalist system as some firms earning a profit. In the L.M.E. the same conditions will give rise to inequalities in labour incomes.

It is a well established result that if a capitalist and labour-managed firm face exactly the same market and production function, then their inputs and outputs will be identical, if the C.F. is not making a profit. It should therefore come as no surprise that under General Equilibrium the L.M.F. will be Pareto Optimal. This is why the second conclusion has appeared in the literature.

The neoclassical model, therefore, leads us to a dead end. Either both the labour-managed and capitalist systems are efficient, or they are both inefficient. It all depends on the conditions you are assuming at the time.

General Equilibrium is, of course, not a condition that even the most keen neoclassical supporter would argue ever exists. It is merely an ideal to be aimed for. Once we remove General Equilibrium, however, then capitalist profits inevitably reappear. According to the neoclassical model the existence of profits does not lead to the exploitation of labour. Workers will continue to receive the value of their marginal product. The key word is "marginal". For once profits exist then labour will certainly receive less than the full value of its product. Such a situation might well be described as exploitation, and indeed has been by many writers.

In order to make any sensible comparison between the labour-managed and capitalist economies, we must begin by accepting that capitalists do earn profits, and that therefore labour exploitation occurs under capitalism. At the same time the imaginary world of labour supply curves and continuous concave production functions must also be dropped.

In the next sections a neo-Ricardian model is used to show that the neoclassical conclusion that the LME might be less efficient or less just than the capitalist economy is wrong. In fact the reverse is true. The LME is a considerably more equitable and efficient system.

In the next sections I draw heavily on Ian Steedman's "Marx after Sraffa".[3] Both his models and numerical examples have been repeated verbatim when the capitalist economy is being described. They have then been adapted to take account of labour-management.

## 1. A Model of Labour Exploitation

The first casualty of neoclassical economics in this model is the continuous and concave production function. Choices of technology do exist, but they are limited. Any adjustments tend to be abrupt. There is little opportunity for smooth harmonious responses to changing economic conditions.

Next to go is the labour supply schedule. In this model labour has the choice of selling its labour power under the conditions determined by management, or of remaining unemployed.

Labour power is the only means of production owned by labour. Labour cannot, therefore, trade its time between selling labour power or alternative productive activities. Workers do not have the resources to set up their own business or to earn a decent living through investments.

The concept of a labour supply curve does not describe the true position of labour, and therefore has no role in determining the wage rate. Changes in conditions of employment under capitalism are won through union/management conflict (sometimes observed as negotiation). By organising, labour may be able to improve their working conditions, but their ability to do so will be very dependent on the level of unemployment throughout the economy.

Following Steedman we will begin with an exceptionally simple model of an economy. In this economy only one choice of technology exists. The conditions of employment, which are represented by the

wage rate, are also fixed. We will start with a numerical example used by Steedman, and then translate this into his more general model.

Imagine a simple economy of three industries. "One industry produces the means of production, to be called iron, one produces gold, and the third produces a necessary consumption good, say corn. In each industry the production process uses only labour and iron as inputs ... whichever industry iron is used in, it is completely used up in one year. Thus there is no fixed capital."[4]

Table 9.1 shows the physical inputs and outputs of each industry.

TABLE 9.1 SIMPLE REPRODUCTION IN A THREE INDUSTRY ECONOMY.

| | Inputs: Iron | Inputs: Labour | | Outputs: Iron | Outputs: Gold | Outputs: Corn |
|---|---|---|---|---|---|---|
| Iron industry | 28 | 56 | → | 56 | | |
| Gold industry | 16 | 16 | → | | 48 | |
| Corn industry | 12 | 8 | → | | | 8 |
| Total | 56 | 80 | → | 56 | 48 | 8 |

Source: Steedman, p. 38.

Let gold be the money commodity, so that its price Pg becomes the numeraire, i.e. Pg = 1. From Table 9.1 we can derive the following:

$$(1 + r)(28\,Pi + 56w) = 56\,Pi \qquad (9.1)$$

$$(1 + r)(16\,Pi + 16w) = 48\,Pg = 48 \qquad (9.2)$$

$$(1 + r)(12\,Pi + 8w) = 8\,Pc \qquad (9.3)$$

Where:

r = the rate of profit

Pi = the price of iron

Pc = the price of corn

w = the wage rate in money units

This is an equilibrium model, in which the rate of profit 'r' is assumed equal throughout the economy. This state of affairs is achieved by the entry and exit of firms. Thus the imposition of a common rate of profit is equivalent to the neoclassical general equilibrium condition of zero profits. In fact, as Steedman explains, this condition could be relaxed, and a unique solution can be arrived at, so long as we know the ratio of rate of profits between industries.

Equations (9.1) to (9.3) are not sufficient to determine the unknowns, as there are four, r, Pi, Pc and w. A fourth equation is necessary, and this is provided by the value of the real wage. The real wage is determined outside the model, and either reflects subsistence levels or some rate arrived at following a struggle between workers and owners. In this case, let the money wages paid to workers just enable them to purchase five units of corn. Then:

$$80\ w = 5\ Pc \qquad (9.4)$$

Each unknown is now uniquely determined, and the approximate solutions are:

r = 52.08%, w = 0.2685

Pi = 1.7052, Pc = 4.2960

## 2. Labour-Management Compared

Next we introduce labour-management into the numerical model described. The change to L-M is represented simply by labour receiving all net output. Income per worker is equalised across industries by entry and exit of firms. The same process that made profits equal. Let $p_i \quad p_c \quad p_g = 1$ be prices under the LME and Y = labour income in money units.

We can rewrite equations (9.1) to (9.3) as:

$$28\ p_i + 56\ Y = 56\ p_i \qquad (9.5)$$

$$16\ p_i + 16\ Y = 48 \qquad (9.6)$$

$$12\ p_i + 8\ Y = 8\ p_c \qquad (9.7)$$

Now we have three equations and three unknown. Thus the fourth equation necessary for a capitalist solution (determination of the real wage rate), is redundant. The solutions are:

$$Y = 1 \quad p_i = 2 \quad p_c = 4$$

It is important to note that not only is $Y \neq w$, but that the prices of iron and corn are also different under the two regimes. This result contradicts the neoclassical solution, that all prices of both inputs and outputs are the same for the LME and CE in general equilibrium.

Can we say anything about the direction of the differences between the two economies? To do so it is necessary to describe a more general model.

## 3. A General Model (Of Simple Reproduction with no Fixed Capital)

Let the gross output of each commodity be unity by a suitable choice of units, i.e. what was formerly known as 56 units of iron is now one new unit of iron. Equations (9.1) to (9.3) may now be written as:

$$(1 + r)\ (Pi/2 + 56w) = Pi \qquad (9.1a)$$

$$(1 + r)\ (2Pi/7 + 16w) = Pg \qquad (9.1b)$$

$$(1 + r)\ (3Pi/14 + 8w) = Pc \qquad (9.1c)$$

which may be written as

$$(1 + r)\ (P^m A + wa) = P^m \qquad (9.8)$$

In which $P^m$ is a row vector of prices, A a matrix of input coefficients, and a the row vector showing the level of employment in each industry.

Equation (9.8) may be re-written as:

$$P^m\ [I - (1 + r)A] = (1 + r)\ wa \qquad (9.9)$$

or

$$P^m = w\ (1 + r)a\ [I - (1 + r)\ A]^{-1} \qquad (9.10)$$

Let the sum of the elements of a = L. That is, L is the total employment of labour power by the economy measured in units of time. Equation (9.4) may now be written as:

$$wL = P^m c\omega \qquad (9.11)$$

where $c\omega$ is the <u>real</u> wage rate, a column vector of goods measured in physical units.

Combining (9.8) and (9.11) we find that

$$L = (1 + r)a\ [I - (1 + r)A]^{-1} \qquad (9.12)$$

This is an important result, for it shows clearly that, as L,A and a are all fixed, then r and $\omega$ are inversely related to one another. In other words, with given conditions of physical production, the rate of profit is inversely related to the level of the real wage rate w. The conflict between workers' and capitalists' interests becomes quite clear.

Furthermore, if the real wage rate is given, then the rate of profit is fully determined by technological restraints, i.e. the size of net physical output as represented by the matrix (I - A). Technological constraints ensure that the rate of profit cannot rise above a certain level, even if real wages were forced down to zero.

At this point we can return to the labour-managed economy. Equations (9.5) to (9.7) can be written as:

$$\rho^m A + Ya = \rho^m \qquad (9.13)$$

$$\therefore \quad Ya = \rho^m (I - A) \qquad (9.14)$$

Quite simply, total real labour income ($Ya\rho^m$) is equal to total net physical output (I - A).

Since, as we have already noted, the rate of real wages is directly related to the rate of profit, the size of real wages can be derived, as a function of the rate of profit, directly from equation (9.10), without the need for equation (9.11). From (9.10) it is clear that

$$\omega = wa\, P^{m-1} = \frac{[I - (1 + r)A]}{(1 + r)} \qquad (9.15)$$

Therefore $Ya\rho^{m-1} > \omega$ as long as $r > 0$. Thus, the real income earned by labour in an L.M.E. must be greater than the real wage earned under a capitalist system as long as the rate of profit is positive under capitalism.

Isn't this a tautology? If you define an economy in which there is labour exploitation, i.e. profits are a direct deduction from labour incomes, then you are certain to find that labour will be better off in an economy of zero profits. This is quite true. But the purpose of this exercise is to illustrate that if you build a model of an economy in which labour exploitation does not exist (the neoclassical model), then you are certain to find that labour will find itself no better off under an L.M.E.

An underlying assumption of the model so far is that all profits are consumed by capitalists. Accumulation and expanded reproduction are ignored. Once the role of profits is seen as one of capital accumulation as well as capitalist consumption, then the overriding exploitative nature of profits becomes blurred. Accumulation will be considered under Section 9, but first some more interesting results can be derived from the model of simple reproduction.

## 4. Relative Prices

The numerical example described in sections 2 and 3, illustrated that relative prices of products could be different for a C.E. and L.M.E. in equilibrium. How will relative prices change? What will make them rise or fall?

Let us return to the three industry economy - iron, gold and corn. The input coefficient matrix A could be rewritten as:

$$A = \begin{bmatrix} a_{ii} & a_{ig} & a_{ic} \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \qquad (9.16)$$

where $a_{ii}$ is the input of iron required to produce one unit of iron (½ in the example). Because gold and corn are not used as means of production, the bottom two rows are zero.

Under a capitalist system, equation (9.10) tells us that in equilibrium

$$P^m = w\,(1 + r)a\,\left[I - (1 + r)A\right]^{-1} \qquad (9.10)$$

From (9.16) we find that

$$\left[I - (1 + r)A\right] = \begin{bmatrix} 1 - (1 + r)a_{ii} & -(1 + r)\,a_{ig} & -(1 + r)\,a_{ic} \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} \qquad (9.17)$$

The inverse of this is:

$$\left[I - (1 + r)A\right]^{-1} = \begin{bmatrix} 1 & a_{ig}(1 + r) & a_{ic}(1 + r) \\ 0 & \{1 - a_{ii}(1+r)\} & 0 \\ 0 & 0 & \{1 - a_{ii}\,(1+r)\} \end{bmatrix} \qquad (9.18)$$

Returning to equation (9.10 ) we find that:

$$\frac{P_i}{P_c} = \frac{w(1 + r)\,a_{li}}{w(1+r)\,\left[a_{li}\,a_{ic}\,(1+r) + a_{lc}\,\{1-a_{ii}(1+r)\}\right]} \qquad (9.19)$$

where $a_{li}$ is the input of labour required to produce one unit of iron, and $a_{lc}$ to produce one unit of corn.

This can be simplified to:

$$\frac{Pi}{Pc} = \frac{a_{li}}{a_{li}a_{ic} + (1 - a_{ii})\,a_{lc} + (1 + r)\,\left[a_{li}a_{ic} - a_{lc}a_{ii}\right]} \qquad (9.20)$$

For the L.M.E. we have, from (9.13), that:

$$\rho^m = Ya\;\;(I - A)^{-1} \qquad (9.21)$$

Now,

$$I - A = \begin{bmatrix} 1 - a_{ii} & -a_{ig} & -a_{ic} \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} \qquad (9.22)$$

and the inverse

$$(I - A)^{-1} = \begin{bmatrix} 1 & a_{ig} & a_{ic} \\ 0 & (1 - a_{ii}) & 0 \\ 0 & 0 & (1 - a_{ii}) \end{bmatrix} \qquad (9.23)$$

and

$$\frac{\rho_i}{\rho_c} = \frac{Ya_{li}}{Y(a_{li}\, a_{ic} + a_{lc}\, (1 - a_{ii}))} \qquad (9.24)$$

or

$$\frac{\rho_i}{\rho_c} = \frac{a_{li}}{a_{li}\, a_{ic} + (1 - a_{ii})\, a_{lc}} \qquad (9.25)$$

Now we can compare relative prices in the capitalist and labour managed economies by comparing (9.20)and (9.25). Two points are clear: (i) there will be no difference in relative prices as long as the rate of profit is zero; (ii) the direction of change in relative prices depends on the sign of the term $(a_{li}\, a_{ic} - a_{lc}\, a_{ii})$. What is the meaning of this term?

The capital labour ratios of the iron and corn industries measured in <u>physical</u> units may be written as

$$\left(\frac{K}{L}\right) i = \frac{a_{ii}}{a_{li}} \quad \text{and} \quad \left(\frac{K}{L}\right) c = \frac{a_{ic}}{a_{lc}}$$

We must remember that the physical units used are the gross output of each commodity (iron in this case), and units of time for labour.

Now let us say that the corn industry is more capital intensive (has a higher K/L ratio) than the iron industry. Then:

$$\left(\frac{K}{L}\right)_c > \left(\frac{K}{L}\right)_i \quad \text{or} \quad \frac{a_{ic}}{a_{lc}} - \frac{a_{ii}}{a_{li}} > 0$$

In other words, multiplying through by $a_{lc}\ a_{li}$, the condition that the corn industry is more capital intensive than the iron industry may be written as

$$(a_{li}\ a_{ic} - a_{lc}\ a_{ii}) > 0$$

which is exactly the term derived earlier.

Returning to equations (9.20) and (9.25) we see, therefore that as long as $r > 0$, then if the corn industry is more capital intensive than iron, then the price of corn as a proportion of the price of iron will be lower in the equilibrium LME than in the equilibrium C.E. Why does this occur? Simply because labour is under priced in a capitalist system with positive profits. Consequently, the higher the proportion of labour directed into a product, the more will its price rise relative to other products under an L.M.E.

This simple model has, of course, skirted round the major issue of adding different kinds of capital. We only had one kind of capital (iron), therefore comparing (K/L) ratios was no problem, because the same units of measurement were used for the inputs of both the corn and iron industry. The neoclassical solution has been to sum the money value of capital, on the premise that the price of capital accurately reflects its true value. However, we have seen that relative prices are highly dependent on the distribution of net product between wages and profit. To understand the underlying relationships within an economy, we must therefore find some common unit of measure other than prices. It is at this point that we inevitably hit the labour theory of value.

## 5. Value

For neoclassical economists the value of a commodity is determined by its marginal utility. Very conveniently, the construction of the neoclassical model ensures that in equilibrium the price of a product equals its marginal utility. Therefore prices are said to accurately reflect value, and so it is argued that the price system is both efficient and just.

As L.M.E. equilibrium prices are exactly the same as C.E. equilibrium prices in the neoclassical model, then L.M.E. prices also accurately reflect the value of products in this model.

A very different picture emerges from the Neo-Ricardian model. But first, we must redefine the concept of value. Utility is no longer a neutral concept in this model, and marginal utility even less so. The pattern of demand for products is intimately tied to the distribution of income. Furthermore the distribution of income is determined by the final outcome of the struggle between wages and profits. Therefore demand, as the visible signal of utility, can no longer be accepted as a neutral measure of value.

We must find another concept of value, and so we turn to Marx. "By the value of a commodity, Marx meant the quantity of labour socially necessary for the production of that commodity. This value, or quantity of labour, includes, of course, not only the labour used directly in the production of the commodity but also the labour used indirectly in its production or, in other words, the labour required to produce the means of production used up in the direct labour process."[5]

Once again, following Steedman, let the values of a unit of iron, a unit of gold, and a unit of corn, be denoted by li, lg and

and lc respectively. Returning to the numerical example in Table (9.1), then:

$$28\,li + 56 = 56\,li \qquad (9.26)$$

$$16\,li + 16 = 48\,lg \qquad (9.27)$$

$$12\,li + 8 = 8\,lc \qquad (9.28)$$

From which we can deduce that:

$$Li = 2;\quad lg = 1;\quad lc = 4.$$

The (labour) value of iron, corn and gold is, therefore, quite different from their prices (shown on page 222) under a capitalist system.

Marx, of course, argued that labour values were essential in the determination of equilibrium prices, i.e. those prices towards which the economy is gravitating. Such an assertion leads to the inevitable "transformation problem" of prices into values.

Here we accept the Neo-Ricardian conclusion that labour values have very little to do with prices in a capitalist economy. Marx used labour value theory to illustrate the existence of surplus value, and, therefore, labour exploitation. However, value theory is not essential to an understanding of exploitation. We know from page 225 that profits and wages are inversely related. Furthermore, under a system of labour management, labour is certain to be better off than under a capitalist system with positive profits (p.225 ). Therefore positive profits are a clear sign of labour exploitation.

Rather than pursue Marx's position, that prices reflect labour value, it seems more fruitful to argue that prices and values can

never be equal under a capitalist system with non-zero profits, and that this should be a cause for concern. The insertion of capitalist profits has distorted prices, and so all the inefficiencies and unjust consequences described in the neoclassical model out of equilibrium, may be expected of a capitalist economy in full equilibrium.

You will not be surprised to learn that, of course, under an L.M.E. prices exactly reflect labour values. A glance at the solutions at pp. 223 and 231 makes this clear. The reason becomes obvious when we convert equations (9.26) to (9.28) into the more general statement that:

$$\mathbf{l}A + a = \mathbf{l} \qquad (9.29)$$

$$\therefore \quad \mathbf{l} = a(I - A)^{-1} \qquad (9.30)$$

where $\mathbf{l}$ is a row vector of labour values.

The similarity of equations (9.21) and (9.30) is obvious. By coincidence, in the numerical example, $Y = 1$. Thus prices and labour values were exactly equal. In fact under an L.M.E. labour values will be reflected in <u>real</u> prices, i.e. nominal price divided by the cost of one unit of labour, $Y$. The insertion of the rate of profit, $r$, into equation (9.10) makes it impossible for either real prices or relative prices to reflect labour values in a capitalist economy.

## 6. <u>Introducing Fixed Capital</u>

So far it has been assumed that all existing means of production are consumed in one period of production. Fortunately, they are fully replaced by the production process, and any extra production (net output) is consumed by capitalist as profits or labour as wages. Once again relying entirely on Steedman's analysis, fixed capital is now introduced. For clarity we begin with a numerical example

taken from Steedman, Chapter 10.

Now the only two products in the economy are corn and machines. Consider a case of falling efficiency, i.e. old machines are less efficient than new machines. Part of the output of a process using new machines is old machines, which may either be set back into production or scrapped. Table 9.2 describes such an economy. We remain with simple reproduction, so that one period of production uses as many new and old machines as it produces. There is therefore no capital accumulation, and all other output is consumed. The problem of realisation, when savings by capitalists or labour might result in some net product being left unconsumed, is, therefore, abstracted from.

TABLE 9.2

| Industry | Inputs | | | | Outputs | | |
|---|---|---|---|---|---|---|---|
| | Corn | New Machines | Old Machines | Labour | Corn | New | Old |
| Machines | 3 | 0 | 0 | 3 → | 0 | 3 | 0 |
| Corn (NM) | 49 | 3 | 0 | 30 → | 88 | 0 | 3 |
| Corn (OM) | 3 | 0 | 3 | 30 → | 30 | 0 | 0 |
| Total | 55 | 3 | 3 | 63 → | 118 | 3 | 3 |

Source: Steedman, p. 145.

From Table 9.2 we can derive the following equations for a capitalist economy:

$$(1 + r)\ (3\ Pc + 3\ w) \quad = \quad 3\ Pn \tag{9.31}$$

$$(1 + r)\ (49Pc + 3Pn + 30w) = 88\ Pc + 3Po \tag{9.32}$$

$$(1 + r)\ (3\ Pc + 3\ Po + 30w) = 30\ Pc \tag{9.33}$$

Now let the price of corn be the numeraire, so that Pc = 1, and let the real wage equal two thirds of a unit of corn per unit of labour time, i.e.

$$w = \tfrac{2}{3}Pc = \tfrac{2}{3} \tag{9.34}$$

So we can derive the following results

$$r = 20\%; \quad Pn = 2; \quad Po = \tfrac{2}{3} \tag{9.35}$$

For the L.M.E. the following equations can be derived from Table 9.2:

$$3\ \rho_c + 3\ Y = 3\ \rho_n \tag{9.36}$$

$$49 + 3\rho_n + 30\ Y = 88\rho_c + 3\ \rho_o \tag{9.37}$$

$$3 + 3\ \rho_o + 30\ Y = 30\ \rho_c \tag{9.38}$$

Remembering that $\rho_c$ has been set equal to 1, then

$$\rho_n = 2; \quad \rho_o = -1; \quad Y = 1.$$

The negative price of old machines, indicates that under a labour-managed economy old machines would be better scrapped. To see this let us look at the results when only the first two processes in Table 9.2 are used. Now,

$$3\ \rho_c + 3\ Y = 3\ \rho_n \tag{9.39}$$

$$49 + 3\rho_n + 30\ Y = 88\ \rho_c \tag{9.40}$$

and if $\rho_c = 1$, then

$$\rho_n = 2\ \frac{1}{11}\ ; \ Y = 1\ \frac{1}{11} \tag{9.41}$$

The money value of income is therefore higher when old machines are scrapped than when they are used. In fact, since $p_c$, the price of the only good consumed by labour, has been set equal to one in both cases, then the real income of labour will also be higher if old machines are scrapped. A similar experiment with the capitalist example would show that profits would suffer from the scrapping of old machines, as indicated by the positive value of Po.

Why would an L.M.E. discard old machines when a capitalist economy would continue to use them? Under the capitalist system labour is exploited and therefore not paid its true value, equal to Y. Consequently, although the old machine process is very labour consuming considering its small output of corn, it is still profitable to capitalists. For labour managers it would be far more sensible to transfer the labour used in the old machine process into the machine and corn industries using new machines.

In the last section it was suggested that the distortion of prices away from labour values under a capitalist system could result in a very inefficient use of resources. The above example illustrates just how this could occur.

The numerical example derived from Table 9.2 can be just as easily generalised as the earlier example. Equations (9.31) to (9.33) may now be written as:

$$(1 + r)\ (P^m A + wa) = P^m B \qquad (9.42)$$

where B is the matrix of outputs, which now incorporates joint products and fixed capital as a special kind of joint product.

From (9.42) we can deduce that:

$$P^m = w(1 + r)\, a \left[B - (1 + r) A\right]^{-1} \qquad (9.43)$$

The output matrix B has replaced the identity matrix I of equation (9.10).

For the L.M.E. equations (9.36) to (9.38) may be generalised to

$$Y a = \rho^m (B - A) \qquad (9.44)$$

and therefore

$$\rho^m = Ya\,(B - A)^{-1} \qquad (9.45)$$

It should be clear that all the earlier conclusions concerning the comparative performance of the L.M.E. and C.E. in equilibrium will not be altered by the introduction of fixed capital and joint products.

## 7. The Choice of Technology

Up to now we have not allowed for any choice of technology, except in terms of use of old or new machines. However, for many industries, more than one process may be available. How can this be incorporated into the picture?

Once again exactly following Steedman's line of argument, we find that choice of technology may be represented by a set of N input matrices Ao ... Aj ... An.[6] Thus the Jth combination of one production method for each product is represented by Aj. For convenience, input coefficients are adjusted so that all input matrices produce the same output matrix B.

How do capitalists choose which of the many technologies they should use? Their object, as always, is to maximize the rate of profit, r. From ( 9.42 ) we see that, for a given real wage rate,

$\omega = WLP^{m-1}$, then:

$$(1 + r_j)\ (P_j{}^m A_j + L^{-1}\omega\ P_j{}^m a) \quad = \quad P_j{}^m B \qquad (9.46)$$

or

$$(1 + r_j)\ (A_j + L^{-1}\omega\ a) \quad = \quad B \qquad (9.47)$$

and

$$r_j = \quad B(A_j + L^{-1}\omega\ a)^{-1} \quad -1 \qquad (9.48)$$

Capitalists will therefore choose that combination of technologies, Aj, which maximizes $r_j$. The term in (9.48) is not easy to decipher, although it is clear that the choice of technology is very dependent on the real wage rate .

How will the L.M.E. choose its techniques? In line with the C.E. we must assume that the object of labour managers will be to maximize their real income, $Y/p^{m-1}$. Returning to equation (9.45) we see that

$$Y/p_j{}^{m-1} \quad = \quad (B - A_j)\ a^{-1} \qquad (9.49)$$

The L.M.E. will, therefore, choose those techniques, A which maximize real net output per unit of labour used in each industry, $(B - A_j)a^{-1}$. Returning to equation (9.30) we find that labour values, L are equal to:-

$$l = a\ (B - A)^{-1} \qquad (9.50)$$

or

$$l^{-1} = (B - A)\ a^{-1} \qquad (9.51)$$

Therefore labour's real income may be described as

$$Y/p_j{}^{m-1} \quad = \quad l_j{}^{-1} \qquad (9.52)$$

Thus, when choosing techniques so as to maximize real income, the L.M.E. aims to minimize the labour value of each product, i.e. they choose a combination of technologies which minimize the direct and indirect labour inputs into each commodity.

A concern of neoclassical economists has been that the labour managed firm may have a tendency towards over-capitalisation, and consequently be inefficient. Although, of course, in the neoclassical structure this tendency could only be effective when there is dis-equilibrium, since we all know that there is no difference between the C.F. and L.M.F. at general equilibrium. The numerical example in section 6 suggests that an L.M.E. may tend towards greater capital intensity even in equilibrium and that this may be no bad thing.

We cannot assume, however, that the result in section 6 can be generalised. Let us return to Table 9.2 while taking account of the conclusion reached above . We now see that an L.M.E. would reject the old machine using process not because it is more labour intensive but because the direct and indirect labour input into one unit of corn produced under this process is so much more than under the new machine process. The K/L ratio of the old machine process could be held constant (i.e. the left-hand side of the corn (OM) line remains the same), but if the output of the old machine process rose from 30 to, say, 50 units of corn, a quick calculation would show that the old machine process would now be viable under an L.M.E. In other words, the total direct and indirect labour put into producing one unit of corn by a combination of the two processes would be less than if only the new machines were used.

This analysis suggests, therefore, that the neoclassical conclusion that an L.M.E. is prone to over capitalisation is very misleading.

Even in situations where an L.M.F may opt for a more capital intensive process than its C.F. partner, the choice would be a far more "efficient" one than that made by the C.F.

Another position taken by neoclassical economists is that the tendency to over capitalisation by an L.M.F. (in disequilibrium) will create serious problems of unemployment. Increased demand for a commodity will, they argue, stimulate a larger growth in both output and labour employed by a C.F. than an L.M.F. In fact the reverse is also true - a drop in demand will cause an L.M.F. to reduce labour less than a C.F. Therefore we could also argue, even along neoclassical lines, that an L.M.E. is less likely to slump into high unemployment. These points will be pursued further in Chapter 10 which discusses situations of disequilibrium.

If we return to the equilibrium analysis so far, it should be noted that throughout we have conveniently assumed a fixed supply of labour, L. Why should the labour used by either a C.E. or an L.M.E. in equilibrium equal the labour supplied? Neoclassical economics gets round this one by introducing the labour supply schedule. Unemployment is the result of excessive real wages. A cut in real wages will, it is true, reduce effective demand and, therefore, the demand for labour. Fortunately a cut in real wages will also encourage many workers to transfer their labour power to other lucrative activities which do not involve selling their labour to capitalists. Fortunately more workers drop out of the labour market as a result of a cut in real wages than the fall in labour demanded. Consequently unemployment disappears.

Neo-Ricardians would reject the labour supply schedule. Workers do not disappear with a drop in real wages (except of course for the well documented case of married women). Therefore a cut in real wages, by reducing the demand for labour, would effectively raise levels of unemployment. If we accept the Neo-Ricardian view, the demand for labour is no more likely to equal supply, even in equilibrium, under capitalism than under an L.M.E. Therefore, achieving equilibrium is not an end in itself. Schemes must be introduced to aim for equilibrium with full employment. Such schemes would have to encourage entry of new firms and growth among existing firms.

Techniques of production do not just pop out of thin air. They are usually arrived at following research conducted by the firms which will apply the techniques. As C.F.'s are searching for techniques to maximize profits, it is very probable that the direction of technical progress followed by a capitalist economy would be different from that of labour-managed economy.

## 8. Variations within the Labour Process

Up to this point we have assumed that the intensity of effort put in by workers per unit of time remains constant. It can, of course, vary. The object of C.F.'s is to maintain as high a level of effort as possible. In Chapter 6 Steedman illustrates that, not surprisingly, a rise in labour intensity can be viewed as equivalent to a drop in real wages. The struggle between capitalists and labour will be a dual one over both wages and the labour process.

Many authors have argued that the intensity of labour effort may be different under an L.M.E. than under a C.E. Either labour

managers increase their efforts because they can now reap the rewards of their work, or they reduce effort now that they have the option of doing so. We found in section 4 that real labour income under an L.M.E., $Ya/\rho^{m-1}$, is certain to be more than real wages under the C.F., $\omega$, so long as profits are positive. However, if labour effort is lower in an L.M.F. than in a C.F., then the difference between $\omega$ and $Ya/\rho^{m-1}$ could disappear. The opposite would be true if labour worked harder in an L.M.F. However, the important point to realise is that labour is now able to make the choice between commodities and effort or leisure time. A choice which could only be very unsatisfactorily made through labour struggles and disputes under a capitalist system. It should be remembered, that comparatively low incomes in an L.M.F. may reflect members' choice, rather than their failure to work efficiently.

## 9. Returns to Scale

The discussion so far has conveniently assumed constant returns to scale. Although we have argued that the neoclassical continuous concave production function is very far fetched, and that a limited number of discrete choices reflects the true situation, this still does not remove the issue of economies of scale. It would seem not impossible that, even within such limited choices, some economies of scale may exist.

It is well known that a capitalist firm working under a "U" shaped production function will not operate at the point of constant returns to scale when it is making a profit. The labour-managed firm, on the other hand, will always try to operate at constant returns to scale.[7]

Equation (9.8) is therefore something of a mis-representation

of the capitalist position. It assumes that capitalist firms are producing at the point of maximum technical efficiency. In fact they will be operating at some less efficient point on the production function.

We have already seen that the capitalist economy described in equation (9.8) performs badly compared with its L.M. counterpart. The existence of returns to scale will serve to exaggerate this difference. The C.F. will operate at inefficient scales, thereby reducing the size of net output (I - A) or (B - A).

## 10. Expanded Reproduction and Capital Accumulation

You may have noticed that Tables 9.1 and 9.2, and all the models described, have assumed a fixed allocation of labour between processes. Thus, in Table 9.1, 56 units of labour are always applied to the iron industry whatever the distribution of income between wages and profits. A change in relative prices, therefore, does not stimulate an expansion or contraction of industries. In Chapter 13 Steedman incorporates the possibility of choices over labour allocation between industries and, therefore, choices over the pattern of output.

If the pattern of output is variable, maintaining the fiction of simple reproduction becomes even more precarious. Net output of capital goods (iron in our first example) is unlikely to remain at zero. At this point then, we introduce expanded reproduction, in which there is a positive net output of capital goods during one period of the production process, i.e. there is capital accumulation.

The input and output matrices, A' and B', now represent not only all industries, but also every available production processes for every industry. Columns of A' and B' represent commodities, whereas

the rows are the number of processes. A' and B' will therefore be rectangular rather than square matrices.

The elements of A' and B' will be taken to represent the inputs to and outputs from the jth process when it is operated by one unit of labour time.

Now if g is the rate of growth, then clearly g is constrained by the size of net output. Assuming that labour consumes all their wages, and that capitalists reinvest all their profits, then

$$(1 + g)\ (A' + \omega' i)\ x \leqslant B'x \qquad (9.53)$$

where: $\omega'$ = real wages per unit of labour time

$i$ = a row vector of unit elements

$x$ = column vector showing how much labour-time is allocated to each process.

Where a process is not used then xj will equal zero.

From equation (9.42) we know that

$$(1 + r)\ (P^m A + wa) = P^m B \qquad (9.42)$$

or

$$(1 + r)\ (P^m A + \omega a\ P^m) = P^m B \qquad (9.54)$$

Now converting to coefficients measured in units of labour time, then

$$(1 + r)\ P^m\ (A' + \omega' i)\ x \geqslant P^m B'x \qquad (9.55)$$

(N.B. now the vector x is determined within the model, rather than of given values as represented by vector a.)

Equation (9.55) is now written as an inequality because A' and B' include many processes which will not be used because they are not sufficiently profitable. Thus "the revenue from any process is at most equal to (1 + r) times the capital advanced to set it in motion."[8]

However, any product produced over and above the needs of replacement and growth will have a zero price. Thus (9.53) may be written as:

$$(1 + g)\, P^m\, (A' + \omega' i)\, x = P^m B' x \qquad (9.56)$$

Further, any process which cannot achieve the profit rate r will not be used, i.e. $x_j$ for that process will be zero. Therefore (9.55) may be written as

$$(1 + r)\, P^m\, (A' + \omega' i)\, x = P^m B' x \qquad (9.57)$$

Therefore, comparing (9.56) and (9.57) we reach the well known conclusion that:

$$(1 + g)P^m = (1 + r)\, P^m = P^m B' x \left[(A' + \omega' i)x\right]^{-1} \qquad (9.58)$$

Thus, either there is no production at all, or r = g, i.e. the rate of profit, equals the growth rate. Secondly, for a given real wage $\omega$, and with workers consuming all their wages, then r = g are uniquely determined.

## 11. Growth in the L.M.E.

A similar logic may be followed for the L.M.E. Equation (9.56) is now replaced with

$$(1 + g)\rho^m\, (A' + \rho^{m-1} Y')\, x = \rho^m\, B' x \qquad (9.59)$$

and equation (9.57) becomes

$$(1 + c)\, \rho^{m}\, (A' + \rho^{m-1}\, Y')\, x = \rho^{m}\, B'x \qquad (9.60)$$

The meaning of Y' is now distinctly different from Y. In earlier discussions we simply assumed that labour consumed all products over and above that required to replace the inputs used up in the production process. Now we assume that labour managers reserve some of their income for accumulation, c, while consuming the remainder of the net product = Y'. The unsurprising conclusion is that the rate of growth in the L.M.E. must equal the rate of accumulation decided on by labour managers.

The L.M.E. emphasises the very simplified assumption made in the capitalist model, i.e. that capitalists now reinvest all profits (earlier we assumed that they consumed all profits). In fact, of course, they will do both. So we should write that r = c+k, where k = the rate of capitalist consumption. Equation (9.57) would now be written as

$$(1 + c + k)\, P^{m}\, (A' + w'i)\, x = P^{m}B'x$$

and (9.56) as

$$(1 + g + k)\, P^{m}\, (A' + w'i)x = P^{m}B'x$$

Therefore, for the capitalist economy, we may also write that $g = c \leq r$. (At the moment we ignore the "realisation problem", that savings by capitalists or workers do not get fully channelled back into the economy via investment. Fora discussion of this see Chapter 10).

Suddenly the L.M.E. and C.E. are beginning to look very similar once more. But is there any reason why the rate of accumulation should

be the same for the two economies? Not at all. In the C.E. the rate of accumulation is determined by the following:

(a) the outcome of the struggle between labour and capitalists which determines the real wage rate (or the intensity of the labour process) and therefore the rate of profit 'r';

(b) the desire for accumulation as against consumption of capitalists;

(c) the technological limitation on the maximum rate of profit.

For the L.M.E. the technological limitation is also important. But apart from this, the rate of accumulation will be entirely determined by labour's preference between consumption and accumulation. By coincidence, the rate of accumulation may be the same in both economies, but even then relative prices and choice of technology will be different, unless capitalists reinvest all profits. As long as capitalists consume part of the profits, then even if capital accumulation is equal in the two economies, Y must still be greater than $\omega$, with all the consequences discussed earlier.

Neoclassical economists argue that the rate of accumulation chosen by capitalists will reflect society's desired rate of accumulation. How does this work? Well people in general save. The savings reflect the desired rate of accumulation. Savings are channelled through the banks and reinvested. Investment and saving are equalized by the rate of interest which amazingly equals the rate of profit. Thus, the populace recoups the product taken from them at the point of production, for purposes of investment, via the interest earned on their savings. At the same time, they manage to grab back profits which for a moment, it seemed, might have quite unreasonably been disappearing into the pockets of a few capitalists.

Further, all means of production receive their marginal product. The income of each individual determines their power to influence the overall level of savings, but as each individual receives a "just" income, then everything is satisfactory.

This logic falls down if we accept that income distribution is the end result of class struggle, rather than the smooth adjustment of continuous curves. Now wages may be forced so low that labour have nothing left to save, and they would certainly prefer to transfer accumulation to their own consumption. Unfortunately, they don't get any say in the matter.

Labour struggle may push up wages to the point at which some accumulation (savings) is seen as desirable. Even so, the bias of income towards profits ensures that capitalists always have unreasonable weight in determining the level of accumulation and growth.

Ultimately the rate of accumulation might be quite similar in the L.M.E. and C.E., but probably it will be very different (either more or less). However, rates of growth and accumulation found in the L.M.E. will reflect the wishes of a much broader spectrum of the population than in the C.E.

## 12. The Pattern of Demand

This discussion has centred entirely on the process of production. Issues of exchange have been ignored. If we return to the first numerical example, we see that capitalists and labour fought over the distribution of net product between profit and wages. However, the content of the consumption goods available were taken as given, i.e. equal to 48 units of gold and 8 units of corn. Labour managed to win 5 units of corn and capitalists consumed the rest (48

units of gold and 3 units of corn). With the conversion to an L.M.E., labour got to consume the entire net output of 48 units of gold and 8 units of corn.

What if gold didn't seem as desirable to labour as to capitalists? What if 5 units of corn were more than enough, and another 3 units of corn were the last thing any worker wanted? Suppose someone was allergic to corn. How do they persuade producers to grow barley? By offering money, of course. If labour and capitalists receive wages and profits in the form of money, then demand schedules suddenly appear on the scene. So, neoclassical economists would argue, a labour theory of value is inadequate. Value theory must reflect consumers' demand, as well as costs of production.

It is certainly true that demand is a vital determinant of price when economies are in disequilibrium. In this situation price not only serves to ration goods, but also to signal situations in which production should expand or contract. This is true for both the L.M.E. and C.E.

However, even neoclassical economics would accept that in equilibrium (zero profits) prices come to reflect costs of production. These prices = average costs, would, however, bear no relation to labour values.

If we consider the L.M.E., it should be clear that: even if labour managers decide to move resources away from the production of corn and gold and into the production of barley and other consumption items demanded by workers; and even if this necessitates some juggling with the capital goods industries to ensure that enough capital in the right combinations is produced to keep the whole process going; that in the end the relationship described in equation (9.30) will

still hold. Once the L.M.E. gets itself back into equilibrium, and adjusts the pattern of output to meet demand, then relative prices will settle down so as to exactly reflect relative labour values.

For the capitalist economy the picture is quite different. Neoclassical economists are indeed right to point out that prices will not reflect labour values, for we have seen in section 5 that this is impossible as long as the rate of profit is not zero. However, even for the C.E. in equilibrium, demand will lose its impact on relative prices. We can see from equation (9.10) that equilibrium prices are entirely dependent on technological coefficients and the rate of profit. The difference in the pattern of prices in the two economies is therefore nothing to do with demand schedules, but entirely due to the fact that capitalists take profits out of net product.

Demand will, however, be very important in determining the mix of output. We may expect that, as long as workers' consumption patterns are different from that of capitalists, so the pattern of output in an L.M.E. will be different from that of the C.E. One very obvious outcome of a conversion from an L.M.E. to a C.E. may be a change in the proportion of capital goods in total output. Whether or not this proportion will rise or fall will depend on the rate of accumulation desired by capitalists and labour.

The neoclassical structure is used to imply that the mixture of outputs produced by a capitalist economy reflect the combined desires of the population. In fact the pattern of output is heavily weighted towards capitalists' preferences. Within an L.M.E. this choice is returned to the majority of the people.

## 13. Application of this Analysis

Economists have had very little success in predicting the macro-economic implications of labour management. Either they have assumed that macroeconomic relations will be little affected by the introduction of labour management,[9] or they have tried to apply micro-economic predictions to macro issues. Frequently neoclassical predictions of differences in the behaviour of labour managed and capitalist firms are searched for in aggregate observations. The underlying assumption is that changes at the micro economic level will not set in motion some kind of multiplier effect which will soon over-turn the initial micro-economic response. Theories of under-investment and over-capitalisation in L.M.E.'s are typical of this approach.[10]

The internal logic of the neoclassical model ensures that micro economic responses of capitalist firms automatically return the economy to a Pareto Optimal General Equilibrium. Consequently, any sensible link between micro and macro economics is ruled out.

The fundamental difference between capitalism and labour management is at the micro (firm) level. Consequently, economists sensibly began to look at labour management at the micro level. By employing the standard western approach to micro economics, they were therefore unable to analyse the macro economy.

The Neo-Ricardian model does not preclude the possibility of unemployment, inflation, uneven distribution of income etc. Therefore the changes at the firm level can be traced through to the national level.

The models described in this chapter make no pretensions to being realistic. They are equilibrium models. They can, however, act as the first building block of a macro-economic analysis of the L.M.E. Each equilibrium condition must now be painstakingly removed and the implications analysed. I have discussed the consequences in Chapter 10.

FOOTNOTES TO CHAPTER 9

1. DOMAR, E. (1966) "The Soviet Collective Farm as a Producer Co-operative". American Economic Review, Vol. 56.

2. PEARCE, I.F. (1977) "Participation and Income Distribution" in D. Heathfield (ed.) "The Economics of Co-Determination" Macmillan.
   DREZE, J.H. (1976) "Some Theory of Labour Management Participation" Econometrica, Vol. 44.

3. STEEDMAN, I. (1977) "Marx after Sraffa". New Left Books.

4. STEEDMAN, p. 38.

5. STEEDMAN, pp. 39 & 40.

6. STEEDMAN, p. 184.

7. For a proof of this see J. VANEK (1970) "The General Theory of Labour-Managed Firms".

8. STEEDMAN, p. 196.

9. See for example, I.B.R.D. (1979) "Yugoslavia: Self-Management Socialism and the Challenges of Development". John Hopkins University Press.

10. See for example, (i) FURUBOTN, E.G. & PEJOVICH, S. (1970) "Property Rights and the Behaviour of the Firm in a Socialist State: The Example of Yugoslavia". Zeitschrift fur Nationalokonomie, Vol. 30;
    (ii) VANEK, J. (1970) "The General Theory of Labour-Managed Firms", p. 27.

# CHAPTER 10

## A MACRO ECONOMIC ANALYSIS OF CAPITALIST AND LABOUR-MANAGED ECONOMIES

Neoclassical theory concludes that, as long as there are no rigidities (e.g. sticky wages) preventing the proper working of the market, then the economy should always be tending towards a full employment equilibrium. The theory therefore effectively excludes any analysis of the possibility of long term under-employment.

The model described in the last chapter takes the level of output and employment as fixed, but it does not assume that this level is necessarily one of full employment. It therefore opens the possibility of linking micro economic conditions to macro economic problems. To do so, however, money and exchange must be introduced.

The numerical examples in Chapter 9 took first the price of gold, and then the price of corn as the numeraire. Fortunately there seemed to be enough gold and corn around to ensure that the process of exchange went smoothly. In the general models money was completely removed by considering relative prices only. Thus equation (9.8) in Chapter 9 could be solved for a unique set of prices, $P^m$. But it could also be solved with an infinite number of other sets of prices which are all multiples of $P^m$. In other words equation (9.8) only determines relative prices. Steedman overcomes this by introducing a fixed real wage, $\omega$, in equation (9.11). The effective numeraire now becomes the real wage, and prices are measured in real wage units. Unfortunately, as we all know, wages

are not fixed in real terms, but in money terms. In order to understand the determination of prices, and therefore inflation, we must introduce money into the system.

The introduction of money opens up many more complications, however. In the last chapter workers automatically received wage goods, while capitalists received consumption and investment goods. In effect Say's Law was in force. Whatever was produced was consumed. The existence of money allows both workers and capitalists to delay consumption and investment. Savings, in the form of money, become a real possibility. We can therefore no longer assume that effective demand will equal the supply of goods. The possibility of crisis emerges. This was a problem foreseen by both Marx and Keynes.

Capitalists cannot make a profit unless they (i) sell their product, and (ii) they sell it at a price high enough to more than cover the costs of production (including wages). This is the essence of the "realization problem". Thus, effective demand must be adequate to ensure that capitalists receive enough profits both to replace investment goods used up, and to be motivated to continue to reinvest their profits in domestic production.

A crisis may occur if profits are so low that either sufficient reinvestment does not take place, or capitalists move their money into non-productive speculative ventures (e.g. property or currency speculation) or transfer their money abroad.

Profits may be squeezed if effective demand falls. But, as we saw in the last chapter, the rate of profit is inversely proportional to the wage rate. Profits may also, therefore, be squeezed if real wages rise.

Marx concentrated on the former problem. He believed that effective demand would fall because, as the organic composition of capital increased, the surplus earned by capitalists would expand at such a rate that capitalists would face increasing difficulties in absorbing the surplus. Once, however, capitalists began to save some of the surplus, then effective demand would no longer equal the supply of goods. Capitalists would find themselves unable to realise the expected surplus, profits would fall, firms would cut back on production and employment, so effective demand would fall once more, and a spiral down into crisis would have begun.

More recent writers have tended to argue that capitalist surplus has expanded as a result of the growth of monopoly capital, rather than of the organic composition of capital. Others have concentrated on the role of wages in squeezing profits. We will look at these in more detail in a moment.

All of this literature might be grouped under the heading of "profits squeeze". There is general agreement among these authors that the workings of the capitalist economy contain inevitable tendencies towards recurrent crises. These tendencies disturb the precarious balance between the share of profits and wages. Glyn and Harrison describe this fundamental contradiction within the capitalist economy.

"Accumulation always proceeds along a tightrope. Consider wages. If accumulation is to continue smoothly, real wages must develop within a certain band. They must not rise so rapidly that conditions for producing surplus value deteriorate enough to prevent capitalists from accumulating further. Nor must they grow so slowly that the conditions for realisation are adversely affected."[1]

Marx and his followers concentrated on the role of a particular class, capitalists, as accumulators. Keynes, on the other hand, taking a more neoclassical perspective, viewed savings as an activity distributed throughout the population. His approach to the problem became, therefore, one of investigating the savings of all classes. Furthermore, unemployment occurred because of the unfortunate failure of savings and investment to coincide at the level of full employment. This failure was not the inevitable consequence of processes at work within capitalism.

In the next sections we consider each of these explanations of crisis in more detail, and consider whether they apply to labour management, and whether their effect on a labour managed economy would be the same as in a capitalist system. The object of this chapter is to consider the various forces which might possibly lead to macro economic problems. It does not attempt to determine which may best explain the economic problems faced by either Britain or Yugoslavia today.

## THE PROFITS SQUEEZE

### 1. The Rising Share of Wages

A mass of evidence has been produced which indicates that the average rate of profit has been falling in the U.K. and other capitalist economies over the last few decades.[2] A frequent explanation of the fall has been the rising share of wages. Why has the share of wages increased? As might be expected, the growing strength of labour unions is a common answer.[3] Other authors have suggested, however, that the depletion of the "reserve army of labour" during the high levels of employment in the fifties and sixties allowed the share

of wages to rise. Glyn and Harrison believe that competition between firms for scarce labour pushed up real wages. Thus, they say, the problem is caused by the over-accumulation of capital in relation to the supply of labour. "The fall in profits was basically due to the internal dynamics of the accumulation process rather than action on the part of workers' organisations."[4]

This proposition can sound extremely similar to the neoclassical perspective. The difference is that the Neo-Ricardian view of the world rejects the notion that there is some natural wage rate (equal to the marginal product of labour), any deviation from which will be bad for everyone in the long run.

Instead it is argued that the economy might settle into a steady state with an infinitely different variety of wage/profit combinations. The problem arises when the existing distribution of surplus between wages and profits is disturbed. The essential instability of the capitalist system will then be exposed and the economy will descend into recession.

Let us return to the equations derived for expanded reproduction in a capitalist economy (Chapter 9 section 9 ).

$$(1 + g + k)\, P^m\, (A' + w'\, i)x = P^m B'x \qquad (10.1)$$

$$(1 + c + k)\, P^m\, (A' + w'i)x = P^m B'x \qquad (10.2)$$

If the share of wages rises then the amount available for capitalist consumption, k, and accumulation c, must fall. Inevitably, then, the rate of growth, g, must fall. Those industries producing investment goods will suffer a decline in demand. Lay-offs and bankruptcies will occur, thereby reducing the amount available for both wages and profits. So more firms will go into decline as demand

falls. The familiar spiral downwards into recession will have been set in motion.

The decline will be even more severe if (i) profits are reduced to the point where they are insufficient even to replace existing capital goods; or (ii) investment outside of domestic production, e.g. overseas[5], in property, as savings in a deposit account, becomes more attractive to capitalists than investment in home production.

Let us now consider the case of a labour-managed economy. For the L.M.E. the equations derived in Chapter 9 for expanded reproduction were:

$$(1 + g)\rho^{m} \quad (A' + \rho^{m-1} Y')x = \rho^{m} B'x \qquad (10.3)$$

$$(1 + c)\rho^{m} \quad (A' + \rho^{m-1} Y')x = \rho^{m} B'x \qquad (10.4)$$

Now, it is quite possible for labour-managers to decide to change the share of accumulation, c, in the surplus, and thereby affect the rate of growth g. The problem of balancing investment, consumption and savings is one that faces both capitalists and labour-managers, and we will discuss that later in this chapter. There is no reason, however, to expect either class struggle or labour shortages to change the division of the surplus between c and Y'. Nor would we expect a rise in the income of labour-managers to induce them to divert their money out of domestic production.

It is clear that on this issue the L.M.E. should be at a distinct advantage. The inherent instability of the capitalist economy arising from the ceaseless accumulation of capital and the struggle between wages and profits should not occur in an L.M.E.

## 2. The Capitalist Response to Rising Wages

Undoubtedly capitalist employers will struggle to hold down absolute wages or to increase labour effort through productivity deals, removing "washing-up time", etc. Capitalists have another option open to them for reducing the wage component of net output. This is the use of cheaper foreign labour.

In its most blatant form, this can be observed as the use of immigrant labour. "By 1969 6-7% of the labour force in France, West Germany and Italy were immigrant workers."[6] The use of guest workers may contain the share of wages by two methods. First, immigrant labour can often be employed more cheaply. Second, by maintaining a regular supply of labour, it reduces the bidding up of wages by firms in pursuit of scarce labour.

Another option available to firms is to transfer production to countries where labour is cheaper. "Whenever workers act to raise wages or control the intensity or duration of work they will lose their jobs to other groups of less well organised and less militant workers in other countries."[7]

Firms may also substitute imports for home produced goods. We have seen that B.S.C. and other multiple footwear retailers imported a high proportion of footwear from countries, such as Hong Kong, with relatively cheap labour. This solution is not only available to distributors. Cowling argues that domestic monopolies often have direct control over imports. He quotes the example of Ford, which is the major car manufacturer in the U.K. and also the leading car importer.[8]

None of these capitalist responses will benefit anyone but the individual owners of capital. The use of immigrant labour will hold down the wages of both local and immigrant workers. The transferring of capital overseas and the encouragement of imports from countries using cheap labour will squeeze domestic production. To quote Cowling again, "such a system of resource allocation, determined as it is by distributional rather than efficiency objectives, is socially inefficient, and involves the wholesale waste of the world's resources."[9] Will labour-managed economies instigate similar wasteful behaviour?

Let us begin with the use of cheap foreign labour. In an L.M.E. this will not reduce the income of domestic workers. In the ideal L.M.F. the surplus should be shared out equally between all workers. Consequently guest workers should enjoy the benefits of incomes as high as local workers, while the L.M.F. benefits from the supply of extra labour which was perhaps becoming scarce.

In practice there is no reason to believe that labour-managers would display any less prejudice than capitalist employers. Like capitalists they would have a lot to gain from holding down the income of immigrants. What foreign workers lose, local workers would gain in their own pay packets.

In an L.M.E., the employment of foreign workers should be less damaging to the local population than in a capitalist economy. Furthermore, only labour shortage, rather than wage pressures from labour militancy, would stimulate the L.M.E. to bring in foreign labour. On the other hand, foreign workers are just as likely to be exploited in an L.M.E. as in a capitalist economy.

We would expect an L.M.E to be just as vulnerable to wholesalers and retailers importing goods produced by cheap labour as the C.E. Labour-managed manufacturers may also import goods and share out the profits between them. An L.M.F. is only likely to use imported goods, however, when demand for its product exceeds its own capacity. It would never, like a capitalist firm, lay-off workers and replace them with imports.

Lastly, no labour-managed firm is going to move abroad in order to enjoy cheap labour.

We may conclude then, that, first an L.M.E. is not likely to be pushed into recession as a result of a squeeze on profits by wages. Second, that the L.M.E. will not suffer the damaging responses to such a profits squeeze observed among capitalist firms.

## 3. Monopoly Capitalism

Chapters 7 and 8 described the growing concentration of the footwear and clothing industries. There is plenty of evidence that the same process has been at work in most industrial sectors of the U.K.[10]

In Chapter 8 we briefly discussed why, at a micro economic level, this process might not be to the benefit of the majority of the population. Neoclassical economists have also recognised that the growth of monopoly power may have adverse effects on micro economic efficiency. They have not linked this to macro economic problems. Others have argued, however, that the rise of "monopoly capitalism" will lead to growing instability and stagnation in capitalist economies.[11]

The basic premise is that the growth of monopoly power will lead to a tendency for the share of profits in national income to increase. This, then, is the opposite of the process described in section 1. How can this argument be combined with the generally agreed fact that the rate of profit has been falling in the U.K. in recent years? The authors argue that the tendency for the share of profits to rise may not actually be observed because of capitalists' increasing difficulties in absorbing their expanded income which will create a "realization crisis".

Many authors have suggested that firms will enjoy an increase in the size of their surplus as their monopoly power increases. They will achieve this by raising their selling price, thereby transferring income from consumers to capitalists. This, in effect, means a transfer of income from workers to capitalists.

There is some evidence that earnings in the U.K. are positively linked to industrial concentration.[12] Thus, where firms have grasped higher profits through market dominance, unions have managed to reclaim part of these profits. Cowling argues, however, that "while union pressure may secure higher wages this is quite consistent with wage share remaining unchanged."[13] Cowling quotes recent evidence that higher levels of concentration are associated with lower wage shares.[14]

The effect of growing monopoly power is, therefore, to transfer income from workers (and other unemployed consumers) to capitalists. The realisation problem occurs because capitalists face increasing problems in absorbing this surplus. Or, as Cowling suggests, it takes firms some time to adjust to the rise in profits when their monopoly power increases. If capitalists do not absorb all of their profits as consumption or investment, then aggregate demand will fall.

Once aggregate demand falls, then firms will find it increasingly difficult to sell their products. Firms will contract, demand will fall further, and so the spiral downwards will continue.

The macro economic instability predicted from a rise in monopoly capitalism is, in essence, a result of a redistribution of income from consumers to capitalists. Once again, we would expect this process to be less damaging in the L.M.E. If a firm enjoys an increase in monopoly profits then members will reinvest this or feed it through to earnings. Unabsorbed surplus should not appear because, as in capitalism, the owners of capital cannot find uses for their surplus, but are not willing to pass on this unused portion to workers. It is possible, however, that if the L.M.F. only adjusts wages at set intervals (say yearly) that unused surplus may pile up. The problem should, however, be less severe than in a capitalist economy.

## 4. The Struggle between firms

The growth in monopoly power is not uniform throughout the economy. In Chapter 8 we described a situation in which large firms not only squeezed consumers, but also other firms.[15]

In equations (9.8)and(9.14) of Chapter 9, a common rate of profit, r, or of labour income, Y, was assumed throughout the economy. As in the neoclassical model it was assumed that there would be a general tendency, through entry and exit of firms, for the rates to equalize across firms. This tendency is, however, continually being sabotaged by firms struggling to push their profits (or labour incomes in an L.M.E.) above the norm.

This process is detrimental to welfare at a micro economic level, as we saw in Chapter 8. It can also have adverse effects at a macro economic level. Increasing differences in the economic power of firms is likely to reduce aggregate demand by both squeezing some firms out of the market and by allowing other firms to accumulate a surplus that they find increasingly difficult to absorb. Thus, a problem of realization will again emerge.

In the L.M.E. the surplus absorption problem should not be so severe for the reasons outlined in the last section. However, weaker firms may well be pushed out of the market. This may not be because they are inefficient, but, say, because the action of other, perhaps less efficient firms, has cut them off from their markets. The L.M.E., like the capitalist economy, may suffer from excessive and unfair inter-firm rivalry.

Would we expect this rivalry, often manifested by take-overs and mergers in capitalist economies, to be as vigorous in a labour-managed economy? In Chapter 8 we noted that the C.P.F. cooperatives did not take part in acquisitions. This might be explained, however, by the constraints of British cooperative law. It might also be argued that the L.M.F. has far less to gain than the C.F. from these activities.

A capitalist firm which takes over a weaker firm may acquire a labour force earning lower rates of pay than its own employees. As long as the owners can keep this fact quiet, or justify it on the basis of lower productivity or whatever, there should be no need to disturb the differential.

The rules of the ideal L.M.F. would, however, require labour incomes to be equalized across plants. An L.M.F. would, therefore,

be disinclined to merge with a less successful firm unless the gains resulting from a strengthening of market power were more than enough to offset the drop in income suffered by the members of the richer firm.

Labour managed firms are, therefore, likely to reject acquisitions in favour of other popular methods used by capitalists to strengthen their position vis a vis other firms. One method, technical innovation, may be of benefit to society at large. Other methods, e.g. advertising, franchise agreements, excess capacity (as a barrier to entry) would be as wasteful in an L.M.E. as in a capitalist economy.

## 5. Inflation

At the beginning of this chapter we discussed how the model described in the previous chapter implicitly assumed that labour is paid in wage goods, and capitalists receive investment and consumption goods. Once we introduce the real condition that both groups are paid in money, then only relative prices are determined. Money prices could take on an infinite number of different values.

Thus, even in perfect equilibrium, prices may not be fixed. In fact, we could envisage a situation in which physical production remains constant, while wages, prices, and therefore profits, all inflate at exactly the same rate. So Kalecki concluded that in a competitive economy, with many small firms, labour could not improve the share of wages by pushing up the wage rate. Employers would simply retaliate by putting up prices, and all else would continue as before.[16]

We can see now how inflation can become an important instrument in the struggle over wages and profits.[17] Sutcliffe writes that "the fact that inflation is higher in the crisis than it was in the boom reflects that falling profitability has made the struggle over distribution a much sharper one."[18]

Inflation, then, can upset the precarious balance between the share of wages and profits. The direction of change is in dispute. Kalecki believed that where oligopoly was predominant, then firms would be unable to pass on the full amount of a wage rise, because individual firms acting alone would find their sales and profits falling when they raised the product price.[19] Cowling disagrees, and argues that "in tightly organised, concentrated industries we can expect a high degree of collusion over wage-fixing ... This may come about via multi-employer agreements ... or by wage leadership with the dominant firm or firms setting the pace."[20] Rowthorn, on the other hand, argues that ultimately the degree to which firms can continue to convert wage rises into price rises depends on how far governments are willing to expand the money supply in line with inflation (see Section 7).

Inflation in a capitalist economy can, of itself, be socially undesirable, and secondly it can upset the balance between wages and profits and set the economy on a downward spiral. Is the L.M.E. exposed to the same hazards?

The labour-managed firm is just as likely as the capitalist firm to mark-up prices whenever possible. Members will try to improve their earningsby whatever means possible, and raising prices will be one method. Thus, if government monetary policy allows it, we would expect inflation in the L.M.E. to be just as severe as in a capitalist economy.

We have seen, however, how a capitalist economy can get itself into a situation of rising inflation combined with growing unemployment, better known as "stagflation". This is a trap into which an L.M.E. is less likely to fall. Inflation of output prices will be immediately fed through into both incomes and investment. Unless labour suffers from money blindness, and thinks that rising nominal income reflects rising real income, then the level and pattern of demand should remain unchanged.

## 6. International Trade

The struggle over the distribution of the surplus is likely to induce producers to mark-up prices. Glyn and Sutcliffe believe that this process is restricted by foreign competition. If producers raise their prices too quickly then consumers will substitute imports for home produced goods, and exports will shrink. Profitability must therefore decline and recession set in.

Inflation in a capitalist economy may therefore induce a crisis both by disturbing the balance between wages and profits, and by forcing down profits in the face of foreign competition. Some authors have disputed that this process has actually been important in explaining the present recession.[21] Nevertheless it is a possible cause of decline to which a capitalist system might be exposed. Is the L.M.E. open to the same risk?

Once again the L.M.E. should have an advantage over the capitalist economy. In the last section it was suggested that, within the constraints of the money supply, the L.M.F. would mark-up prices just as readily as the capitalist firm. Like the C.F., however, the L.M.F. is likely to hold back on price increases if it finds that its product is being squeezed out of the market by cheaper imports.

Workers' earnings will, therefore, also be automatically checked, and the L.M.F. will not suffer a loss in "profits", and therefore have in sufficient resources for reinvestment by the continued upward pressure from wages. The effect of foreign competition on the L.M.E. should, therefore, be to contain inflation rather than to induce a crisis.

We might expect, therefore, the L.M.E. to be more protected than capitalist economies from the import of goods which could be produced by domestic industries. Both economies may, however, suffer balance of payments problems as a result of importing goods which cannot be produced at home.

## THE CIRCULATION OF MONEY

### 7. The Supply of Money

The quantity theory of money, being a tautology, may be applied as much to a labour managed economy as to a capitalist one. The simplest formulation of the quantity theory may be written as:

$$PT = VM \qquad (10.5)$$

where P = prices; T = number of transactions within one unit of time; V = the velocity of money measured in the same time units; and M the supply of money.

If we accept that the number of transactions is a function $\gamma$ of total output, B, then (10.5) may be written as:

$$P^m \gamma(B) = VM \qquad (10.6)$$

For the C.E. with expanded reproduction, equation (10.6) may be written as:

$$(1 + c + k)\, P^m\, (A' + w'i)x = VM \qquad (10.7)$$

and for the L.M.E. as:

$$(1 + c)/\!\!\rho^m\, (A' + /\!\!\rho^{m-1} Y')x = VM \qquad (10.8)$$

If the velocity of money is a constant (which of course is open to doubt) then we can see that if the economy grows at the rate g, as a result of accumulation c, then if prices are to remain stable the money supply M must also grow at the same rate. Inflation cannot occur unless the money supply expands more rapidly than the rate of growth, or the velocity of circulation increases. This was the point made by Rowthorn mentioned in section 5, i.e. the extent to which firms can continue to convert wage rises into price rises depends on how far governments are willing to expand the money supply in line with inflation. Also, of course, on the extent to which governments have control over the money supply.

Regulation of the money supply is, therefore, just as important in an L.M.E. as in a C.E. If the money supply grows too slowly then it may dampen effective demand and lead to a recession. If the money supply and credit expands too quickly then the economy may suffer from severe inflation.

## 8. Withdrawals from the Circulation of Money

Marx and his followers concentrated on the actions of capitalists which might lead to a crisis. As we have seen above, they envisaged that effective demand might not match supply either because capitalists were not able to absorb all of their surplus, or because profits were so squeezed that they chose to move their money out of domestic production.

Keynes concentrated on other actions which might draw money out of circulation, and consequently leave an imbalance between effective demand and supply. He pointed out that taxes and imports were leakages from the circulation, and that unless they were at least balanced by government spending and export earnings, then we might expect output and employment to decline. Even if these expenditures are balanced, we cannot expect this to coincide with full employment. Government action may be necessary to reduce unemployment. This condition applies as much to an L.M.E. as to a capitalist economy.

Keynes also emphasised the role of savings in reducing effective demand. Here he differed from Marx in that he viewed savings as an activity pursued by all members of an economy, and not just capitalists. Furthermore, some capitalists may wish to save and others borrow to invest. So we meet the problem of not only matching savings and investment at the level of full employment, but also of arranging for an efficient distribution of money from savers to investors.

We found in Chapter 6 that most small firms rely entirely on internal financing for investment. The Wilson Committee also found that between 1973 and '77 only 24% of companies' sources of funds was from bank loans.[22] Much of these bank loans will have also been funded by company savings.

In a capitalist economy, therefore, it may not be too misleading to concentrate, as Marx did, on the role of capitalist savings and investment, and to ignore other sources of savings.

In an L.M.E. the position is somewhat different. The distinction

between capitalists and workers disappears. It is the savings of workers which must be relied upon to finance investment. The Macro economic problems highlighted by Keynes might, therefore, be thought of as a better description of an L.M.E. than of a capitalist economy.

Just as in a capitalist economy, savings and investment in the L.M.E. may only be equal at some level of output below full employment. Government intervention will therefore be necessary to either effect the rate of savings or investment, or to inject new sources of demand into the economy.

9. The Rate of Interest

According to neoclassical analysis, the rate of interest is determined by the intersection of the aggregate savings and investment schedules. Each aggregate schedule is determined by aggregating the individual schedules of firms and savers. Individual schedules are derived from applying utility or profit maximizing rules to inter-temporal utility or production functions. (Such as the one described in Section 7 of Chapter 1.)

This equilibrium rate of interest will coincide with neoclassical full employment. By this device neoclassical analysts were able to ignore the effect of the level of national income on both aggregate investment and savings.

The model in Chapter 9 assumes that equilibrium may occur at an infinite number of levels of National Income, and, following Keynes, it is accepted that it is the (expected) level of National Income which predominantly determines the rate of Investment and Savings.

At the individual level firms may choose to borrow more and invest more if the interest rate falls. It would, however, be wrong to

transfer this to the aggregate level. Keynes put it this way, "An attempt to derive the rate of interest from the marginal efficiency of capital involves a logical error" [23]...."The marginal efficiency of capital partly depends on the scale of current investment, and we must already know the rate of interest before we can calculate what this scale would be."[24]

In other words, the rate of profit depends on the level of effective demand, which depends on the level of investment, which depends on the rate of interest, which according to neoclassical economics depends on the rate of profit, and so on. The argument is circular, and leaves all values indeterminate.

Unfortunately Keynes continued to retain the concept of an aggregate marginal efficiency of capital (m.e.c.) He first described m.e.c. schedules for each firm, and then went on to write, "We can then aggregate these schedules for all the different types of capital, so as to provide a schedule relating the rate of aggregate investment to the corresponding marginal efficiency of capital in general which that rate of investment will establish .... The rate of investment will be pushed to the point on the investment demand-schedule where the marginal efficiency of capital in general is equal to the market rate of interest."[25]

Keynes retention of the concept of an aggregate m.e.c. schedule was in fact a hang-over from neoclassical thought. Garegani and others have shown it to be logically inconsistent and unnecessary to Keynes' main line of argument.[26] In fact Milgate has revealed that in the draft of the General Theory Keynes made several attacks on the neoclassical theory of interest. Only after receiving criticisms from Harrod did he dilute his arguments.[27]

If the rate of interest is not determined by the rate of profit then how is it determined? Keynes found himself faced with exactly the same question. "If the rate of interest is not determined by savings and investment in the same way in which price is determined by supply and demand, how is it determined?"[28] In answer, Keynes turned to liquidity preference theory.

So we can conclude that investment may be expected to be related to the rate of profit which is related to the level of national income and is a real phenomenon. The rate of interest, on the other hand, is a purely monetary phenomenon and is determined by the supply and demand for funds for both investment and other reasons, i.e. liquidity preference.

## 10. Under-Investment

The "under-investment effect" described in section 7 of Chapter 1 is a classic example of neoclassical economists incorrectly transferring micro economic conclusions to macro economic conditions.

Their reasoning is based on the premise that there is some "correct" rate of interest, which is that level at which the aggregate investment schedule intersects the aggregate savings schedule, and which coincides with full employment.

In fact, as we have seen, the rate of interest is a purely monetary phenomenon. Its role is to bring the supply and demand for money into equilibrium.

In the Yugoslav case labour managers may choose to transfer money from enterprise investment to personal savings. By doing so they will increase the supply of money available for loans. The rate of interest will fall, and so enterprises will be encouraged to borrow and invest more.

As in a capitalist economy, the level of investment in Yugoslavia will be determined by technical conditions, the preference for consumption, and the level of national income. Yugoslav property rights will have no effect on aggregate levels of investment. They may, however, effect the channels by which savings are transferred into investment. Capitalist firms may rely more on internal savings, while Yugoslav firms prefer to borrow funds.

## 11. The Level of Investment

The neoclassical presumption that the rate of interest and the rate of investment in capitalist economies is in some way "correct" is therefore quite wrong. There is no "correct" rate of investment. The equilibrium rate of interest and investment may well be at less than full employment.

In fact, because many more people in an L.M.E. would be involved in the decision as to how much of the surplus should be accumulated rather than consumed, then the L.M.E. rate of investment might be considered far more "correct" than the capitalist one. Unfortunately, even in the L.M.E., those people not working in enterprises would be excluded from the decision.

It is interesting to observe that if it is true that capitalists are continuously driven to accumulate more and more capital, then a capitalist economy with sufficient profits must continuously grow in order to remain stable and not topple over into crisis.

The hope that eventually an economy may reach a steady state of simple reproduction is, consequently, an impossibility under capitalism. A capitalist economy must drive forwards with endless, perhaps socially undesirable, growth, or spiral down into a cycle of falling profits and increasing unemployment.

For the L.M.E. in which workers may consume all the surplus (over and above replacement investment) this contradiction does not exist. Furthermore, the decision as to whether growth is desirable will be put into the hands of all the workers in an L.M.E., and not left to a small group of capitalists.

## 12. How does the Labour Managed Economy compare with a Capitalist Economy?

We must begin by pointing out that this chapter has been concerned with the "ideal" L.M.E. composed entirely of those "ideal" labour managed firms described in Chapter 1, and working within a perfectly free and responsive market system. Anyone who knows anything of the Yugoslav system will know that it deviates considerably from this description. In the next chapter we will discuss the real conditions faced by Yugoslavia.

We have seen that the capitalist economy contains within it inherent tendencies toward crises. These tendencies disturb the precarious balance between the share of profits and wages. Some tendencies, e.g. the over-accumulation of capital, may push up the share of wages. Other tendencies, e.g. increasing industrial concentration, may increase the share of profits. Moves in either direction may push the economy into recession.

The labour-managed economy does not contain the same contradictions. There is no struggle between wages and profits because each worker is the recipient of their full share of the surplus. Consequently, as we have explained in sections 1 to 6, the L.M.E. will not inevitably move towards one crisis after another.

The L.M.E. will, however, face various problems which are also met under capitalism. Investment and savings must be brought into line by government intervention. The money supply must be expanded at a rate sufficient to oil the process of exchange as the economy grows, but not so much as to induce undesirable levels of inflation. Foreign trade must be regulated in some way to avoid balance of payment problems.

If the L.M.E. can succeed in these difficult tasks then we would expect the L.M.E. to progress along a path which is fundamentally more egalitarian and efficient than a capitalist economy, even if it could achieve equilibrium (for a proof of this see Chapter 9).

We may conclude from this chapter that the ideal L.M.E. is fundamentally more stable, efficient and egalitarian than a capitalist economy. It does not contain tendencies pushing it inexorably toward a crisis, although it would require demand management to keep it on a steady path.

FOOTNOTES TO CHAPTER 10

1. GLYN, A. & HARRISON, J. (1980) "The British Economic Disaster", Pluto Press.

2. These are just a few examples of the literature:

   (a) MARTIN, W.E. (ed) (1981) "The Economics of the Profits Crisis", Department of Industry.
   (b) GLYN, A. & SUTCLIFFE, B. (1972) "British Capitalism, Workers and the Profits Squeeze." Penguin.
   (c) MANDEL, E. (1978) "The Second Slump", New Left Books.

3. See for example:

   MAYNARD, G.W. "Factors Affecting Profitability and Employment in U.K. Manufacturing Industry, 1960-78". In MARTIN, W.E. (ed) (1981). As above.

4. GLYN, A. & HARRISON, J. (1980) As above.

5. GLYNL,A. & SUTCLIFFE, B. (1972) As above. Chapter 7, Section 5.

6. GLYN, A. & HARRISON, J. (1980) As above.

7. COWLING, K. (1982) "Monopoly Capitalism". Macmillan.

8. COWLING, K. (1982) As above.

9. COWLING, K. (1982) As above.

10. For a review of the literature see:

    CURRY, B. & GEORGE K.D. (1983) "Industrial Concentration: A Survey". Journal of Industrial Economics.

11. (a) BARAN, P. & SWEEZY, P. (1966) "Monopoly Capital". Monthly Review Press, New York.
    (b) COWLING, K. (1982). As above.

12, STEWART, M.B. (1982) "Relative Earnings and Individual Union Membership in the U.K." Economica.

13. COWLING, K. (1982) "Monopolies and Mergers Policy". Socialist Economic Review.

14. COWLING, K. & MOLHO, I. (1980) "Wage Share, Concentration and Unionism". Paper given at Conference of European Association for Research in Industrial Economics, Milan.

15. See FRIEDMAN, A.L. (1977) "Industry and Labour", Macmillan, for a description of this process in the car industry.

16. KALECKI, M. (1971) "Class Struggle and the Distribution of National Income". Kyklos, Vol. 24.

17. For detailed discussion of this process, see:

    ROWTHORN, B. (1980) "Capitalism, Conflict and Inflation". Lawrence and Wishart.

18. SUTCLIFFE, B. (1983) "Hard Times", Pluto Press.

19. KALECKI, M. (1971) As above.

20. COWLING, K. (1982) As above.

21. (a) BLACKABY, F. (ed) (1978) "De-industrialisation", Heinemann
    (b) COWLING, K. (1982) as above.

22. COMMITTEE TO REVIEW THE FUNCTIONING OF FINANCIAL INSTITUTIONS (1980). Report of the Committee. H.M.S.O.

23. KEYNES, J.M. (1937) "Alternative Theories of the Rate of Interest". Economic Journal.

24. KEYNES, J.M. (1936) "The General Theory of Employment, Interest and Money". Macmillan.

25. KEYNES, J.M. (1936) As above.

26. EATWELL, J. & MILGATE, M. (ed) (1983) "Keynes's Economics and the Theory of Value and Distribution". Duckworth.

27. MILGATE, M. (1977) "Keynes on the "Classical" Theory of Interest". Cambridge Journal of Economics, Vol. 1.
    Reprinted in EATWELL, J. & MILGATE, M. (ed) (1983).
    As above.

28. KEYNES, J.M. (1937) As above.

# CHAPTER 11

## A RE-INTERPRETATION OF THE YUGOSLAV EXPERIENCE

In this final chapter an alternative is offered to the neo-classical interpretation of the behaviour of the Yugoslav economy. The purpose is not to prove that this alternative interpretation is the correct one. A great deal of research would be required for such an enterprise. The aim is rather to suggest that existing empirical studies of Yugoslavia cannot confirm the neoclassical model of labour management, and that a very different understanding of the economic process could be drawn from the same evidence.

The economic system of Yugoslavia has been well documented,[1] and will not be described in any detail here. After the Second World War, Yugoslavia followed the path of other Cominform members and initiated a system of central planning. In 1948 Yugoslavia was expelled from the Cominform. Soon afterwards Yugoslavia began to transform the economic system from central planning to something described as "self-management".

In 1950 the "Law on Management of Government Business Enterprises and Economic Associations by Workers' Collectives" was introduced. This began the process of handing over control of enterprises to workers' councils. The powers handed over to enterprises were initially very limited, but various laws enacted during the following decade steadily increased the formal powers of the workers' council.[2]

Major reforms were introduced in 1965. Their purpose was, to

quote Horvat, "to establish more efficient market relations".[3] Up to 1965 the State had still maintained considerable (although decreasing) control over enterprise behaviour. This was achieved in a number of ways, e.g. price controls, heavy taxation of enterprise surpluses, and state control of investment funds.

The O.E.C.D. reported that in 1964 government institutions still absorbed 51.4% of enterprises' net product. A considerable proportion of this money went into investment funds which were administered at the federal level. Enterprise incomes were extracted through the medium of various taxes. The 1965 reforms abolished some of these taxes (e.g. the contribution of 15% of enterprise income towards the Federal Investment Fund), and reduced others. The aim was to leave enterprises with a much larger proportion of national resources. In 1965 enterprise allocations to government institutions had fallen to 44.8% of their net product, and by 1966 to 40.4%. After this the proportion of contributions began to creep up once more.[5]

The 1965 Reforms also adjusted price differentials. In 1964 60% of industrial products were subject to price controls.[6] The price reforms brought 90% of product prices under control. The aim of the reform was, however, "to eliminate from the Yugoslav price structure the distortions and anomalies inherited from the past".[7] The level of inflation prevented the authorities from freeing prices altogether.

Central Investment Funds were transferred to banks in 1964. Both Federal and Republican banks, however, were still partially under the control of the National Bank.[8] The 1965 Reforms allowed

both enterprises and socio-political communities at both Communal and Republic level to found banks. Control of the funds of these banks lay with those organisations making deposits into the banks, and the influence of these organisations was to be in direct proportion to the size of the deposit made.[9]

Finally, 1965 brought in reforms in the area of foreign trade. The dinar was devalued. Many export subsidies were abolished, and import duties reduced.

The 1965 reforms have been described in some detail because many authors have claimed that a "structural break" occurred in the Yugoslav economy in that year.[10] It has been claimed that only after 1965 were Yugoslav firms free to follow genuine income maximizing policies, and thus behave as predicted by the theory of the labour managed firm. The effects of the 1965 Reforms have, therefore, become an important component of studies of the Yugoslav economy.

In the following sections we will look in turn at each of the predictions from neoclassical analysis which have been tested empirically on Yugoslav data. Estrin and Bartlett observe that the literature "has not yet directly tested the central propositions from economic theory on Yugoslav data; for example those concerning enterprise supply responses and the choice of technique, or investment decisions."[11] Most of the empirical work is, in a sense, once removed from the predictions. For example, theory predicts that the adjustments in labour force size by labour managed firms will result in a dispersion of labour incomes. It is the dispersion in incomes rather than labour force adjustment which has been put to the test.

As far as I am aware, there has been only one direct test of neoclassical predictions using Yugoslav data. Stewart searched for the predicted negative short run change in the labour force when prices rise.[12] Using industry level data he looked for a fall in the labour force when an industry's product price rose more than the national average. The data did not conform to predictions. Industry level employment generally rose when prices in the industry increased more than average. Stewart's findings for Yugoslavia were therefore the same as those noted among C.P.F. cooperatives in Chapter 4.

Empirical studies which do not test the central predictions, but look at secondary data, inevitably open themselves up to alternative explanations, as we shall see below.

1. Income Distribution

Explanations of an uneven distribution of incomes in the Yugoslav Social Sector (self-managed enterprises) fall into two classes. Estrin and Bartlett describe these as the "labour school" and the "capital school."[13]

The labour school argue that Yugoslav income differentials are mainly brought about by the fact that labour markets will not be cleared in an L.M.E. This is because L.M.F.'s will not expand their labour force to the point at which average incomes equal the prevailing wage rate (see Chapter 1).

According to the "labour school" income differentials will appear in an L.M.E. for exactly the same reasons that profits will appear in a capitalist system, i.e. shifts in demand or costs, and

uneven market power among firms. The labour school then argue that because L.M.F.'s are income maximizers rather than profit maximizers, the labour market will not clear, i.e. firms will not adjust their workforce until wages are equal across firms.

We may contrast the labour school's position with that outlined in Chapters 9 and 10. According to this analysis income differences will appear for two reasons: (i) demand or cost shifts, or market power, enable firms to raise their rate of surplus value above average; (ii) the proportion of the surplus value recovered by labour as wages will differ across firms. The latter point will only apply to a capitalist system, while the former will apply to either system.

We can see then that the two schools would agree on why income dispersion would appear in an L.M.E. They would also agree that labour markets will not necessarily clear in an L.M.E. The difference is that the Neo-Ricardian school would also not expect labour markets to clear in a capitalist system.

The Labour School derive their position from the theory of labour management. Their argument is that the maximand of the L.M.F. prevents labour markets from clearing. Put simply, they claim that because labour markets do not clear in an L.M.E., then this is evidence that L.M.F.'s are not profit maximizers.

This position is not very satisfactory. The line of reasoning must lead one to deduce that British firms are also income maximizers, because there is little doubt that income dispersion also exists in the U.K. The empirical work presented by the labour school (see next section) implicitly contrasts Yugoslavia with the hypothetical neoclassical system in which labour markets clear. The Neo-Ricardian school would deny that such an economy exists.

How then might we distinguish empirically between the labour school and the analysis presented in Chapter 9? Both agree as to why income differentials would appear in an L.M.E., both agree that such differentials would not tend to disappear. The difference lies in what is thought to be the objective of firms in either system.

The labour school sees the C.F. as a pure profit maximizer and the L.M.F. as a pure income maximizer. The analysis presented in Chapter 9 would not deny that the two types of enterprise may have differences in their objectives along the lines described in neoclassical theory.. In practice, however, pursuit of these objectives would be very imperfect due to lack of information and flexibility in technology. Secondly, the necessity for firms to hold on to their position in the market, or even to strengthen it through growth, will overwhelm the first objective. Ultimately, then, there will be very little difference in the behaviour of the C.F. and L.M.F.

It might be possible to distinguish empirically between these two schools. The labour school's analysis would suggest that the dispersion of the surplus value per worker earned by firms should be higher in an L.M.E. than a C.E. We shall see in the next section that this prediction has not been tested by the labour school.

The "capital school" explain income dispersion in a different way. Their position is that in a C.E. each worker receives their correct return, i.e. the value of their marginal product. Under normal circumstances, all of the remaining surplus will be absorbed by the cost of hiring capital. Capital market imperfections may, however, enable capitalists to retain part of the surplus. If the capitalists raise funds internally and then purchase capital then the "cost" of capital following purchase ($P_p$) will be only the payments on any extra funds which had to be borrowed. If all funds are raised internally then $P_p$ will be zero. If some, but not all, funds are borrowed, then the marginal product of capital

will be more than the cost of capital, $P_p$.

In a capitalist system, then, capitalists may enjoy a capital rent equal to $(MPK - P_p)K$. The labour school then argue that the difference in an L.M.E. is that this rent will be earned by labour, and so income differentials will appear because the value of the capital rent will differ across firms.

The line followed by the capital school is, therefore, very similar to that taken in Chapter 9, i.e. that under a labour managed system the surplus normally taken by capital is returned to labour. The contrast lies in the assumption by the capital school that there is some "correct" level of the rate of interest at which all profits are absorbed. The Neo-Ricardian analysis considers that the rate of interest is a monetary phenomenon unrelated to the rate of profit, and that there is no equilibrium at which all profits have disappeared.

## 2. Labour Market Imperfections

In this section we look at empirical studies which have explained income dispersion in Yugoslavia by the existence of labour market imperfections.

Wachtel opened the discussion in 1972.[14] He did not explicitly base his analysis on the theory of labour management. Later writers have, however, set his work within the labour school.[15]

Wachtel noted that interindustry wage differentials increased in Yugoslavia between 1956 and 1966. He suggested that richer firms would have more funds to reinvest. Their higher levels of investment would raise labour productivity above the average, and so feed through into higher incomes.

Wachtel's analysis is classified as labour school because he assumed that the action of firms would not remove the differentials. Instead he thought that the differentials would increase over time. He believed that all firms would try to pay some minimum wage rate. Poor firms would therefore be left with very little money for new investments. As rich firms continued to reinvest at a high rate, average net product would grow even further, leaving yet more money to reinvest, and so the cycle of expanding incomes would continue.

If, as Wachtel suggests, wage differentials are due to uneven rates of investment, then, he argued, we would expect average industry wage rates to be related to labour productivity and levels of concentration in the industry. Wachtel found that cross-section estimates for 22 industries for five years between 1956 and 1965, indicated that labour productivity and industrial concentration were increasingly important in explaining wage differentials.

We have noted that Wachtel's study is placed under the labour school because he was concerned that in Yugoslavia the workings of the labour market failed to reduce income differentials. His explanation as to why differentials might appear did not, however, suggest that Yugoslav enterprises are not profit maximizers. Nor did he suggest that the failure of the labour market was unique to labour management. Indeed, he noticed that similar models had been used to explain interindustry wage movements in the United States.

Wachtel's evidence can fit the Neo-Ricardian analysis just as well as the neoclassical model: a fact which he probably would not deny. His work cannot be used to imply that labour managed and capitalist enterprises have fundamentally different objectives.

In 1979 Estrin returned to the same issue.[16] Unlike Wachtel, he claimed to be testing a hypothesis specific to labour management. "It is intended to focus empirical attention towards those observable variables which economic theory predicts would behave differently in a self-managed environment."

Using the theory of the L.M.F., Estrin derived the result that average incomes are directly related to technical efficiency, output prices, market concentration, and the scale of production, while inversely related to the cost of capital.

Under neoclassical theory exactly the same relationship could be derived between these variables and the rate of profits. Estrin therefore implicitly implies that such variable profits could not, at least in part, be won back by labour in a capitalist system. This assumption is not supported by the evidence from capitalist economies (see Chapter 4).

Secondly, Estrin's evidence cannot be used to show that Yugoslav and capitalist firms pursue different objectives. All that we can say is that variables which create differences in the rate of surplus value earned by firms in a capitalist system, apparently are related to variations in incomes in Yugoslavia. In other words, the share of surplus taken by capitalists is redistributed to labour in the Yugoslav system.

Two years later Estrin took a different approach to the same problem.[17] He now states that "the analysis of self-managed economies is that income dispersion between and within sectors would significantly widen as a consequence of introducing such a system."

His empirical work was based on the presumption that income dispersion should increase following the 1965 Reforms. This would be because the Reforms finally freed firms to pursue their own objectives.

The data behaved as expected. Inter-sectoral dispersion of average incomes increased after both the 1965 Reforms and more minor reforms in 1961. The dispersion soon narrowed again, which Estrin put down to "moral suasion" from the authorities.

Estrin notes that in 1956 (the first year of his data) "the authorities promoted equality (of incomes)".[18] In fact income equality has been a continuing objective of Yugoslav policy makers. The 1965 Reforms introduced a few short years in which the workings of "the market" were given precedence over income equality. As Estrin himself observed, moral suasion soon reappeared to control the level of dispersion.

All that Estrin has proved by his evidence, that differentials widened after the Reforms, is that when the authorities relaxed their control over income differentials then these differentials increased. We might expect the same phenomenon to occur whether the economy was centrally planned, self-managed, or capitalist.

Estrin supports his argument by making international comparisons of income differentials. The reason for doing so is apparently because, although Estrin now apparently recognises that income differentials will appear in a capitalist system, he anticipates that self-management will make these differences more acute.

Estrin found income dispersion in Yugoslavia to be significantly wider than in either developed or Eastern bloc countries. Several comments may be made about this result.

First, Yugoslavia is generally classified as a "middle income" country, and comparisons are usually made with countries at a similar stage of development.[19] Income dispersion usually decreases as the economy develops. Comparing Yugoslavia with more industrialised countries therefore put it at a disadvantage. Estrin compared Yugoslavia with only two other middle income countries, Greece and Spain. He found that the level of income dispersion in Yugoslavia lay in between that found in Greece and Spain. This would suggest that Yugoslavia's stage of development could explain income dispersion just as satisfactorily as its system of self management.

Second, it is well known that Yugoslavia suffers from huge regional differences in incomes. This is a heritage from the days when Yugoslavia was divided between several different empires.[20] Estrin argues that the high level of Yugoslav income dispersion cannot be explained by regional disparities. "The coefficient of variation between 21 sectors in each of the eight republics and autonomous provinces were generally greater than for Yugoslavia as a whole."[21]

Singleton and Carter have, however, observed that regional income differentials within republics are as great as inter-republican differences." "For example, the per capita income of the four central communes of Zagreb in 1974 was four times higher than that of the communes of Vrgin Most, Dvor, and Gracac."[22] Estrin's evidence cannot, therefore, rule out regional differences as an explanation of the degree of income dispersion observed.

Finally, to return to the point made earlier, even if Estrin can convince us that Yugoslavia suffers from an exceptional degree of income dispersion, this only tells us that disparities in capitalist surplus value have been redistributed into incomes in Yugoslavia. It does not prove that Yugoslav enterprises have a different

objective to capitalist firms.

Estrin states that "the important questions in the following sections relate to the scale of these differences between industries and firms under self management."[23] Here he implies that self management will lead to wider income differentials than found in a capitalist system. This may be true, but again can be put down entirely to the redistribution of surplus from capital to labour. In order to distinguish between different enterprise objectives we would have to compare the dispersion of enterprise net products per worker (average income plus profits per worker) in Yugoslavia with that found in comparable capitalist countries.

Much the same criticism may be applied to a recent paper by Estrin, Svejnar and Mow.[24] The central concern of this paper is to determine whether labour or capital market imperfections can best explain income differentials in Yugoslavia.

The authors estimate Cobb Douglas and CES functions for 19 Yugoslav industries. They estimate a function derived from the relation

$$Y = \beta_0 MPL + \beta_1 (MPK - P_p)\frac{K}{L} \qquad (11.1)$$

where: Y = net income per worker; MPL & MPK = the value of the marginal products of labour and capital respectively; $P_p$ = cost of capital; K = capital; L = labour; $\beta_0$ & $\beta_1$ are constants.

The values of MPL and MPK are derived from the production function estimates.

The authors argue that if the labour school are correct then most income dispersion can be explained by variations across firms

in the estimates of MPL. If the capital school are correct, most variation will stem from dispersion in the term $(MPK - P_p)\frac{K}{L}$. Their results suggest that Yugoslav income dispersion is largely a consequence of labour market imperfections.

This conclusion might be correct, but once again all that the authors have proved is that dispersion in the rate of surplus value observed in a capitalist system, may be observed as labour income dispersion in Yugoslavia.

If we consider the case of the profit-maximizing capitalist firm, we know that:

$$wL + P_pK + \pi = (MPK)K + (MPL)L \qquad (11.2)$$

where: w = the wage rate and $\pi$ = profits.

Equation (11.2) may be rearranged as:

$$w + \frac{\pi}{L} = MPL + (MPK - P_p)\frac{K}{L} \qquad (11.3)$$

Equations (11.1) and (11.3) are, therefore, the same, except that incomes, Y, in the L.M.E. are replaced by surplus per worker $(w + \frac{\pi}{L})$ in the capitalist economy. Equation (11.1) therefore only captures the redistributive effects of labour management, and tells us nothing about differences in enterprise objectives.

As we noted earlier, in order to prove that enterprises follow different objectives under a self-managed system, we would have to look for a wider dispersion in Y in the L.M.E. than found in the dispersión of$(w + \frac{\pi}{L})$ in comparable capitalist economies.

## 3. Capital Market Imperfections

The major empirical work in this area was conducted by Vanek

and Jovicic. They suggested that Yugoslav firms do not pay the full cost of capital, i.e. $(MPK - P_p) > 0$. This may be because funds have been accumulated internally or because the rate of interest is too low. If this is true then part of workers' income will be composed of a capital rental of $(MPK - P_p).\frac{K}{L}$. Consequently, workers' incomes will be a function of the capital/labour ratio, $K/L = k$. They estimate a function of the form:

$$y = a + bk_i \qquad (11.4)$$

where: $y$ and $k$ = net product of industrial branch, and capital, both as a ratio of unskilled labour equivalent.

Vanek and Jovicic conclude from their study that variations in capital rentals $(MPK - P_p)\frac{K}{L}$ were the main explanation of variations in labour incomes throughout Yugoslavia. Estrin, Svejnar and Mow have, however, called this result into question.[26] They point out that the estimation methods effectively excluded any other result.

Whether or not the results were correct, we have already pointed out in section 1 that this line of argument cannot be distinguished empirically from the redistributive effects of labour management emphasised by the Neo-Ricardian school. It cannot be taken as evidence of a unique L.M.F. maximand.

## 4. Monopoly, Concentration and Mergers

The conclusion of the labour school is that conditions which give rise to uneven profits in a capitalist economy will lead to income dispersion in an L.M.E. The Neo-Ricardian analysis leads to the same conclusion without making any reference to neoclassical theory. Both schools would agree that market dominance, monopoly

power and restrictive practices will raise income levels in an L.M.E.

In the last chapter we suggested that an L.M.E. should be less prone to the appearance of a small number of giant firms dominating the market. In this section we will consider whether this holds true for Yugoslavia.

In section 4 of Chapter 10 it was suggested that L.M.F.'s would be less inclined to merge with other firms than would capitalist firms. The evidence appears to support this. Several authors have reported that the majority of mergers are brought about as the result of pressure from the authorities.[27] The stronger firm in the partnership often tries to resist the merger.

Mergers are apparently promoted by officials for two reasons. Tyson draws attention to "the widespread view that large size is required for efficiency and international competitiveness and that "powerful groups of producers are the protagonists of production and development." [28, 29]

Estrin believes that the majority of mergers are instituted in order to save weaker firms from going bankrupt.[30] Bankruptcy is virtually unheard of in Yugoslavia. The authorities apparently put more emphasis on maintaining employment than on using other resources efficiently. Estrin estimated that "about 85% of mergers represent painless exit ..., and that only about 15% of mergers were between firms seeking to exploit scale economies or market power."[31]

Although the existence of self management has apparently discouraged firms from merging with others, Yugoslavia is still renowned for its high levels of concentration. This may be explained

by three factors. First, Yugoslavia has a relatively small domestic market, so that inevitably the number of firms in each sector must be limited. This is made more acute by the fact that Yugoslavia is still not a fully industrialised country, and a large proportion of the population work in agriculture. Second, as Estrin has explained, the years of central planning immediately following the Second World War, concentrated even further a relatively small industrial sector.[32] Finally, as we have seen, the authorities promoted mergers.

Even so, Estrin found that more Yugoslav sectors showed a decline in concentration over the period 1959-68 than an increase. Quite the opposite was true of the U.K.[33] Furthermore, he emphasised the difference in the kind of competition that Yugoslav firms face. "Yugoslav firms are unlikely to enjoy such a dominating position ... as their Western counterparts ... Because there are fewer firms, and the size distribution is narrower and less skewed, the Yugoslav giants face a small number of medium size firms, rather than a large hinterland of very small ones."[34]

On the other hand, Yugoslav firms have tried other methods of promoting market power. Granick quotes examples of associations between firms which were intended to act as cartels, although he did not consider them to have been very successful.[35] Governments have done almost nothing to prevent restrictive practices, and since 1972 have implicitly encouraged them by promoting "Self Management Agreements." (SMA). Such agreements were intended to coordinate enterprise production. An example might be an agreement of a producer to supply another firm with certain materials over a fixed period. This agreement secures the producer's outlet and excludes other producers from competing for the custom. The effect of the S.M.A. is therefore very similar to the vertical take-overs discussed in

Chapter 8.

One final point should be made in this section. Neoclassical theory of the labour managed firm suggests that labour managed firms would choose to remain smaller than their capitalist counterparts.[36] Evidence from Yugoslavia does not support this view. Jan Vanek observed that among Yugoslav firms "the motivation to growth ... seems on the whole very strong - at least equal to and probably stronger than their motivation for short-term efficiency and cash incomes."[37] Granick found that the majority of the enterprises in his survey were constantly trying to branch out into new activities.[38] Estrin reports that the average firm size grew steadily.

This evidence conforms with the picture of enterprise rivalry described in Chapter 8 . Although restriction of output might be beneficial to labour managed firms in the short run, in the long run firms must grow in order to advance their dominance of the market, or at least to keep up with rivals. We might expect this force for internal growth to be even stronger in an L.M.E. where firms would be less keen to grow through mergers.

5. Over Capitalization, Unemployment and Growth

Neoclassical theory of the labour managed firm suggests that, in sectors which are doing well enough for capitalist firms to be making a profit, labour managed firms would opt for excessively capital intensive techniques (see Chapters 1 and 2).

As a result the productivity of capital would be low and this would reduce the growth in both output and employment. This prediction of slow growth is a direct result of the assumption that the L.M.F.

will have a different maximand from the capitalist firm. Redistribution of the surplus would not on its own lead to the same results. Empirical tests of these predictions are therefore better tests of the neoclassical theory than studies of income distribution.

Both Sapir and Estrin have recently published papers which suggest that the slow down in growth following the 1965 reforms was a consequence of Yugoslav firms being set free to pursue income maximizing objectives.[39] They follow a similar line of argument. Both note the sudden decline in the growth of industrial output after 1965. The growth in both employment and investment fell after 1965, but employment growth declined much more rapidly, and actually became negative in 1966 and 1967. The net result was that average capital intensity rose, while the productivity of capital fell.

Sapir makes the point that a change in the capital labour ratio should only reduce output growth if the elasticity of substitution between capital and labour, $\alpha$, is less than one. He estimates the value of $\alpha$ for the entire Yugoslav manufacturing sector and does find it to be considerably less than one. Using this estimate of $\alpha$ he then imputes the degree to which the slow down in the growth of output could be ascribed to a decline in the growth of labour and capital, and how far to a change in factor proportions. He attributes 20% of the fall in the growth rate to a change in factor shares, the remainder being due to a slow down in factor growth.

The evidence would appear to support the neoclassical theory. We can explain these results in a different way however.

It is no surprise to find that firms invested relatively more in relation to labour following the Reforms. The change in the taxation system left them with a much higher proportion of their income to distribute as they wished. It is not unlikely that prior to 1965 firms would have preferred to invest more but were prevented from doing so by government policy, which directed investment funds into new firms. After 1965 the number of new firms entering production dropped dramatically. Estrin records 118 new firms in 1964, and only 24 in 1965 when the Central Investment Fund had disappeared.

Neoclassical economists might ask why firms would continue to invest when the productivity of capital was falling. But here we must distinguish between expected returns and actual returns. Yugoslav firms had grown used to a rapid level of growth in both output and demand, and therefore would have expected to benefit from heavy investment. In fact growth slumped in 1965, thereby reducing the level of demand. We may speculate that firms had to cut back on their planned level of output. Thus, although the new capital might have been physically able to produce at high levels, in actuality the productivity of capital fell because of the decline in demand.

Tyson adds another explanation as to why investment remained high following the reforms.[40] She suggests that it takes firms some time to adjust incomes upwards in response to a rise in net product, although ultimately their object is to maintain distributed earnings as a fixed proportion of the net product.

Tyson estimated an equation of this form using sectoral data over 10 years. The estimates were statistically significant for

eleven of the sixteen sectors. So we would expect the sudden rise in enterprise funds available for distribution in 1965 to result in a sharp rise in enterprise savings, as was observed.

There is a contradiction in the approach taken by Estrin and Sapir. They have argued that the release of market forces in 1965 led to over-capitalisation by firms, and this gave rise to a slow down in growth. If, as we would expect, the slowing of growth squeezed the surplus available to firms, then, following neoclassical reasoning, we would expect L.M.F.'s to reverse their position and switch to more labour intensive methods. In fact Estrin records a steady rise in the capital labour ratio over the next seven years, even though he describes the economy as being in a "severe recession" after 1965.

According to neoclassical theory firms will select more capital intensive techniques in order to raise members' incomes even further than if they retained existing capital labour ratios. In fact Estrin reports that the rate of growth of industrial incomes fell from 5.44% between 1952-65 to 5.12% from 1965-73.

Estrin claims that there was actually a relative acceleration in the growth of real wages, because industrial wages grew more rapidly than rural wages. Since government regulations allowed firms to retain a much higher percentage of their incomes after 1965, we would expect the industrial/rural ratio to rise. If we accept Tyson's permanent income hypothesis, then we would expect the ratio to increase for a few years and then to level off. Estrin's own results show this process taking place.

The evidence on wages does not, therefore, support the theory,

and it is not difficult to explain the relative rise in firm investments. The fall in the productivity of capital measured by Sapir might appear to explain the fall in the growth rate, but this result is achieved because the issue of effective demand is ignored. Ironically, although both studies are concerned with a slowing of growth and employment, the analysis makes the standard neoclassical assumption that what firms can produce they can sell. The fall in capital productivity is consequently explained by changing capital shares rather than a drop in effective demand. This emphasises once more the failure of neoclassical analysis to bridge the gap to macro economic issues.

If our alternative analysis in Chapter 10 is to have any credence it must offer a different explanation as to why growth slowed after 1965. This is not difficult. In fact the Yugoslav economy had already entered a downward cycle before 1965. Estrin's figures show that the growth in industrial employment fell from 8.4% 1962/3 to 1.2% 1963/4. This recession was exacerbated by the overall decline in the level of investment after 1965. Total real investment fell by 14% in 1965 compared with 1964.[41] Much of this loss was due to the fall in the formation of new enterprises. The liberalisation of foreign trade also brought about a steady deterioration in the balance of payments. In 1965 Yugoslavia enjoyed a surplus on current account of US $65 million, in the following three years there were deficits of the order of $41, $82 and $109 million respectively.[42]

We may speculate that the slump in expected demand caused firms to cut back on planned production. As in a capitalist economy, it is always easier to cut back on labour than fixed assets. So the

industrial labour force fell in 1965 and '66. Because firms were able to cut back on labour, the fall in the productivity of labour was considerably less than in the productivity of capital.

6. The Level of Investment

In Chapter 1 we discussed the Furubotn and Pejovich prediction that Yugoslav firms would tend to under invest. This result is of course in contradiction to the over-capitalization problem discussed in the last section. Furubotn and Pejovich would claim, however, that even in general equilibrium, when capitalist firms would be making no profits, the under-investment effect would apply. The over-capitalization hypothesis is, however, purely a disequilibrium prediction.

There have been no rigorous tests of the former hypothesis. Some impressions can be gained, however, from looking at existing data on enterprise investment. In fact there appears to be general agreement that Yugoslav enterprises suffer from anything but under-investment. Estrin notes that the theory "is inconsistent with the relative acceleration ... of capital at the aggregate and sectoral levels."[43]

Yugoslavia has consistently maintained an exceptionally high level of investment. In 1980 gross fixed capital formation was 35.5% of G.D.P. This proportion was higher than for any other O.E.C.D. member.[44] In the period 1966-70 (the years in which some writers claim that self-management was truly in force), enterprises in the social sector accounted for 72.4% of gross investment in Yugoslavia. 68.4% of this investment was funded from their own savings. In the U.K. 72% of funds raised by quoted companies between 1965 and '69 were raised by internal savings.[46] The savings behaviour of Yugoslav

firms does not, therefore, appear noticeably different from that of of firms in the U.K.

In the last chapter we suggested that the Furubotn-Pejovich effect may have induced workers to channel funds into investment via personal savings rather than collective enterprise savings. This does not seem to have occurred. One explanation may be that the interest to be earned on saving deposits in Yugoslavia was so lowthat the effect was reversed so that leaving savings in the enterprise became much more lucrative than putting them in a bank. The low rate of interest rate would, of course, also make loans popular, but only once enterprise savings had been used up. The World Bank reported negative real interest rates for every year between 1970 and 1975, except for 1972.[47] In other years the rate was positive but very low.

Low interest rates should not necessarily be a cause for concern, as we suggested in the last chapter the Yugoslav property rights might reduce the equilibrium interest rate below that found in a similar capitalist system. There seems little doubt, however, that the Yugoslav interest rate has been below its market clearing rate for some time. The World Bank noted an excessive and unsatisfied demand for investment funds, and this is dealt with by an ad hoc and often inefficient system of rationing funds.[48]

Many authors have suggested that the high rate of investment in Yugoslavia is a consequence of the low rate of interest.[49] We would dispute this view. The low rate of interest may have led to a disequilibrium in the demand and supply of funds, and this may have held back the desired level of investment. The level of investment

seen as desirable would, however, be predominantly determined by the level of national income.

Firms must be able to sell their produce. Even if the rate of interest is negative, if firms cannot sell the product of their investment they will make a loss on the project. The rate of investment must therefore be closely linked to the level of effective demand. In Yugoslavia the fact that firms are never allowed to go bankrupt may contradict this effect. Firms that do not go bankrupt can afford to invest in projects that will make a loss, but might employ relatives and friends. The Yugoslav's lack of bankruptcy, along with their commitment to provide alternative employment for social sector employees should they be made redundant,[50] is probably one reason why investment funds are in such high demand.

## 7. Conclusion

This ends the survey of empirical work developed out of the neoclassical theory of labour management, and using data from Yugoslavia. The number of works cited is small, especially in relation to the preponderance of theoretical literature on the subject. There is a noticeable lack of empirical work on this topic, and, as we have seen, what does exist often falls into the trap of confusing the redistributive consequences of labour management with predictions of a change in the enterprise maximand.

One reason for the small number of empirical studies may be the lack of data readily available for western authors. This problem has had a second effect. It has led researchers to use aggregate data as a substitute for firm statistics. This has encouraged the tendency to apply micro-economic reasoning to macro economic data.

Apart from the questionable validity of using micro economic

methods when considering macro economic issues, the theory of labour management has left yawning gaps in its discussion of Yugoslavia's economic performance. The theory has nothing to say about inflation and the balance of payments. Problems with both of these have been central to Yugoslavia's experience. Nor does neoclassical theory offer any insight as to how the government should regulate the money supply and their own expenditure.

The evidence presented in this chapter cannot be used to argue that the analysis of the L.M.E. presented in the last chapter applies to Yugoslavia; it merely suggests that existing empirical studies do not rule out this alternative analysis. Yugoslavia is not, of course, the ideal L.M.E. described in the last chapter, so that we cannot expect all of the predictions in the last chapter to apply to the Yugoslav case. It would be possible, however, to design empirical work to test how well the analysis in Chapter 10 describes the Yugoslav experience. Such a project is, however, beyond the scope of this thesis.

We may observe, however, that Yugoslavia has survived well through the recent recession experienced by most western countries. In 1981, eleven out of twenty O.E.C.D. countries suffered a fall in the real value of industrial production. In 1982 fourteen out of twenty experienced a fall.[51] Yugoslavia managed to increase real production by 3.9% in 1981 and hold that level steady into 1982.[52]

Figures for employment are available for 14 O.E.C.D. countries. Only seven of these managed to increase total employment in 1981.

By 1982 this number was down to 3. Yugoslavia increased paid employment (i.e. excluding many rural workers) in both years. Over the two years paid employment increased by 5.9%. At the same time registered unemployment has come to be a serious problem in Yugoslavia. The cause is somewhat different from most Western countries, i.e. the drop in total employment. Instead it is due to the rise in those seeking paid employment generated by both a drift from rural to urban areas, and because of the return of many workers who once held jobs in W. Germany and other European countries.

Why has Yugoslavia managed to maintain production when other countries have fallen back, even when it is suffering from an exceptional shortage of foreign exchange? Neoclassical theory of labour management has no answer to this question. The analysis in the last chapter can offer an answer, and suggest that Yugoslavia is less prone to the recessionary effects brought about by a squeeze on capitalist profits.

FOOTNOTES TO CHAPTER 11

1. See for example:
HORVAT, B. (1976) "The Yugoslav Economic System", International Arts and Sciences Press.

2. For a description of the changing legislation and powers of the workers' councils, see:

(a) HORVAT, B. (1976) As above.
(b) SINGLETON, F. & CARTER, B. (1982) "The Economy of Yugoslavia", Croom Helm.

3. HORVAT, B. (1976) As above.

4. O.E.C.D. (1970) "Economic Surveys: Yugoslavia". November.

5. O.E.C.D. (1970) As above.

6. O.E.C.D. (1970) As above.

7. O.E.C.D. (1970) As above.

8. For a description of the banking system see:
SINGLETON, F. & CARTER, B. (1982) As above.

9. SINGLETON, F. & CARTER, B. (1982) As above.

10. See for example:

(a) ESTRIN, S. (1979) "An Explanation of Earnings' Variation in the Yugoslav Self-Managed Economy". Economic Analysis, Vol. 13.
(b) SAPIR, A. (1980) "Economic Growth and Factor Substitution: Whatever Happened to the Yugoslav Miracle". Economic Journal, Vol. 90.
(c) WYZAN, M.L. & UTTER, A.M. (1982) "The Yugoslav Inflation". Journal of Comparative Economics, Vol. 6.

11. ESTRIN, S. & BARTLETT, W. (1980) "The Effects of Enterprise Self-Management in Yugoslavia: An Empirical Survey" University of Southampton Discussion Papers in Economics and Econometrics, No. 8101.

12. STEWART, G. (1981) "Short-Run Employment Behaviour of the Labour-Managed Firm: Evidence from Yugoslavia". University of Warwick Economic Research Papers, No. 191.

13. ESTRIN, S. & BARTLETT, W. (1980) As above.

14. WACHTEL, H.M. (1972) "Workers' Management and Inter-Industry Wage Differentials in Yugoslavia". Journal of Political Economy, Vol. 80.

15. ESTRIN, S. & BARTLETT (1980) As above.

16. ESTRIN, S. (1979) "An explanation of Earnings' Variation in the Yugoslav Self-Managed Economy". Economic Analysis and Workers Management. Vol. 13.

17. ESTRIN, S. (1981) "Income Dispersion in a Self-Managed Economy". Economica, Vol. 48.

18. ESTRIN, S. (1981) As above.

19. See for example the comparisons made by:
TYSON, L.A. (1980) "The Yugoslav Economic System and its Performance in the 1970s". Institute of International Studies, University of California, Berkeley.

20. For a description of the roots of regional inequalities see:
SINGLETON, F. & CARTER, B. (1982). As above. Chapter 17.

21. ESTRIN, S. (1981) As above.

22. SINGLETON, F. & CARTER, B. (1982) As above.

23. ESTRIN, S. (1981) As above.

24. ESTRIN, S., SVEJNAR, J. & MOW, C. (1982) "Market Imperfections, Labour-Management and Earnings Differentials in a Developing Country: Theory and Evidence from Yugoslavia". Department of Economics, Cornell University. Working Paper No. 276.

25. VANEK, J. & JOVICIC, M. (1975) "The Capital Market and Income Distribution in Yugoslavia: A Theoretical and Empirical Analysis". Quarterly Journal of Economics, Vol. 89.

26. ESTRIN, S., SVEJNAR, J. & MOW, C. (1982) As above.

27. (a) GRANICK, D. (1975) "Enterprise Guidance in Eastern Europe" Princeton University Press.
(b) TYSON, L.A. (1980). As above.
(c) ESTRIN, S. (1978) "Industrial Structure in a Market Socialist Economy". University of Southampton. Discussion Paper No. 7717.

28. TYSON, L.A. (1980) As above.

29. FEDERAL EXECUTIVE COUNCIL (1971) "An Outline of the Concepts of the Social Plan of Development of Yugoslavia from 1971-1975". Quoted by TYSON, L.A. (1980).

30. ESTRIN, S. (1978) As above.

31. ESTRIN, S. (1978) As above.

32. ESTRIN, S. (1978) As above.

33. ESTRIN, S. (1978) As above.

34. ESTRIN, S. (1978) As above.

35. GRANICK, D. (1975) As above.

36. VANEK, J., PIENKOS, A. & STEINHERR, A. "Labour-Managed Firms and Imperfect Competition", in VANEK, J. (ed.) (1977) "The Labour Managed Economy". Cornell University Press.

37. VANEK, J. (1972) "The Economics of Workers' Management", George Allen & Unwin.

38. GRANICK, D. (1975) As above.

39. (a) SAPIR, A. (1980) "Economic Growth and Factor Substitution: What Happened to the Yugoslav Miracle?" Economic Journal. Vol. 90.
(b) ESTRIN, S. (1982) "The Effects of Self-Management on Yugoslav Industrial Growth". Soviet Studies. Vol. 34.

40. TYSON, L.A. (1977) "A Permanent Income Hypothesis for the Yugoslav Firm". Economica. Vol. 44.

41. O.E.C.D. (1966) "Economic Surveys: Yugoslavia".

42. O.E.C.D. (1970) "Economic Surveys: Yugoslavia".

43. ESTRIN, S. (1982) As above.

44. O.E.C.D. (1983) "Economic Surveys: Yugoslavia 1982-3".

45. SCHRENK, M., ARDALAN, C. & ELTATAWY, N.A. (1979) "Yugoslavia. Self-Management Socialism. Challenges of Development". World Bank Country Economic Report.

46. DEPARTMENT OF INDUSTRY. "Business Monitor M3."

47. SCHRENK, M. et al. (1979) As above.

48. See for example: SCHRENK, M. et al. (1979) As above. Chapter 8.

49. See for example:

(a) SAPIR, A. (1980) As above.
(b) TYSON, L.A. (1980) As above.

50. TYSON, L.A. (1980) As above.

51. O.E.C.D. (1983) "Main Economic Indicators".

52. O.E.C.D. (1983) As above.

# CONCLUSION

This conclusion will follow the example of many others, and concentrate on the policy implications of the previous discussion. The thesis has concentrated on the purely economic aspects of labour management, and this conclusion will remain within the same limits. The design of policies that will improve the participation and control of members must be one of the, if not the, most important issues facing experimenters in labour management. Unfortunately, it lies outside the scope of this thesis.

The structure of the conclusion will follow a similar pattern to the main body of the thesis. We will first consider cooperatives working within capitalism, and then discuss labour managed economies.

## COOPERATIVES UNDER CAPITALISM

### 1. Pragmatic Solutions

In Chapter 3 we looked at some explanations of cooperative performance which were not based on neoclassical theory. A frequent explanation of the perceived failure of British cooperatives to either survive or grow has been lack of finance. The policy recommendation which naturally follows from this assessment is the need for more financial provisions for cooperatives.

The evidence presented in this thesis would not contradict the proposition that cooperatives suffer from a shortage of funds, but it would question whether cooperatives suffer more difficulties in this respect than other small businesses.

Studies which have emphasised the need for more cooperative

financing have often looked at cooperatives in isolation from capitalist firms,[1] so that distinctive differences between the two types of enterprise have not been made clear. Although we would not dispute that cooperatives would benefit from additional funding, concentration on this issue alone can be misleading. It can lead to the conclusion that ready sources of cash is all that a cooperative needs to succeed, and that once a cooperative has funds it should be left to survive in the capitalist market. The position taken by Chaplin and Cowe is a good example. "Many groups (cooperatives) also reported that finding sales outlets had become a more significant problem, bringing home the point that co-operatives, however pure in structure and product, must survive in a market economy, just like any other business."[2] Thornley comments that "Cooperatives need to experience the discipline of the market place. Few can be expected to sympathise for long with organisations which charge uncompetitive prices."[3]

Thornley does not present any evidence which confirms that it was uncompetitive prices that have squeezed cooperatives out of the market place. The evidence presented in Chapter 6 suggests, instead, that cooperatives have been squeezed out of the market because their potential outlets have been acquired by competitors, and because they are unable to grow to a size sufficient either to (i) set up their own outlets; (ii) have the strength to obtain a decent bargain with monopolistic buyers; (iii) provide the range and flexibility of production available from large competitors.

We conclude from this that, if the promotion of cooperatives is considered desirable, then cooperatives must be provided with a protected market. This policy is usually rejected because it is thought to waste limited national resources by subsidising inefficient production.

There are two reasons why this may not be true. First, many firms secure outlets not by efficient production, but by acquiring the outlet in question. In Chapter 6 we noted the take-over by Courtaulds' of Clutsom-Penn International. This removed Courtaulds' competitor, Du Pont, which had apparently been offering a better price. Second, competition with cooperatives may be in the form of imports from countries with very low wage rates. The cooperatives are, therefore, put at a disadvantage not because they are inefficient, but because they are less exploitative of their workforce. In a country with high unemployment, the savings on unemployment benefit payments to workers who might be employed in a cooperative, may well outweigh the national savings on cheap imports.

Many studies of cooperatives recommend support systems such as banks, managerial advice, and training schemes, for a cooperative sector.[4] Our evidence suggests that this is not enough. Cooperatives must be ensured access to a market. Sometimes inter-cooperative trading is advocated, but the size of this market would be very small in the U.K. Only one of the reports considered in this thesis raises the issue of protecting cooperative outlets. The Wales T.U.C. state that, "a call for preferential treatment would not be feasible or politically realistic, but certainly some features of the French tendering system which entitles cooperatives to an automatic share of public works ... could be enacted."[5] Unfortunately this suggestion is not followed through to the final recommendations.

We have noticed the tendency to study cooperatives in isolation from their markets. One result of this has been, as we have seen, to centre on internal cooperative problems, rather than the conditions that they face outside. A related consequence has been the frequent assumption that the experience of cooperatives elsewhere might be easily transferred to the U.K.

The usual example of this is the Mondragon cooperatives. Many authors have assumed that Mondragon's success compared with British cooperatives must be the result of their unique methods of organising, rather than the economic conditions surrounding them. Typical is this statement by O'Connor and Kelly. "The Spanish experience, in particular, offers more positive lessons. It shows that a number of conditions need to be satisfied if new cooperatives are to have any real chance of long-term success."[6] The authors then proceed to list six conditions found in the Mondragon cooperatives.

Campbell, writing about Polish cooperatives, concludes that "the great success of worker-ownership in both the Mondragon and Polish movements has been due to the similarity of the structures evolved, rather than to any peculiarity of Basques or Poles .... It was found necessary for members to be committed to their undertakings by means of entrance fees and personal shares in capital assets. In the comparatively "affluent" conditions of the West, such commitment is likely to be the more necessary."[7] This is a position frequently advocated by Oakeshott. "The workers' commitment to the long-term success of the enterprise will surely be immensely stronger if it is underpinned by the responsibility which a measure of actual ownership brings."[8]

Oakeshott and Campbell have noticed the success of Mondragon. They have then isolated a characteristic of Mondragon cooperatives not found in the U.K., and assumed that this characteristic explains why Mondragon has apparently been so much more successful. The characteristic in question is the non-collective ownership of assets.

New members are required to buy their share of the assets. The value of these assets appreciate in proportion to the share of profits which are reinvested. When the member leaves she may take her share of the capital (subject to certain restrictions).

In contrast, we would emphasise the very different industrial structure faced by the Mondragon cooperatives when they first started production. Thomas and Logan have made a study of Mondragon. They emphasise that "it would be fallacious to ignore Mondragon's historical context. Indeed, to understand it properly such phenomena as the degree of industrialisation, the history of Basque Nationalism ... have to be taken into account."[9]

The first Mondragon cooperative, Ulgor, was founded in 1954. The cooperatives expanded rapidly over the next two decades. Thomas and Logan observe that "census data collected from 1958 indicates that industrial firms (in Spain) were on average rather small: enterprises employing between one and five workers amounted to 82 per cent of all industrial firms, 12.5 per cent employed between 6 and 25 persons, and only 0.07 per cent over 500 workers."[10] This is considerably different from the oligarchic structure found in the U.K. today. Furthermore, the nature of Basque Nationalism undoubtedly helped cooperatives to secure markets in their locality. Thomas and Logan also noted a rapid rise in consumer spending in Spain during the 1960's. "There was ample room for expansion into new product areas, given that tariff protection was high and that the government planned further increases in real income."[11] Table A shows that, by the late seventies, the Mondragon cooperatives tended to be considerably larger than other industries in their area.

TABLE A. SIZE DISTRIBUTION OF MONDRAGON COOPERATIVES AND OTHER FIRMS IN THE PROVINCE OF GUIPUZCOA (%)

| | Number employed | | |
|---|---|---|---|
| | 1 - 99 | 100 - 500 | >500 |
| Mondragon Cooperatives (1976) | 12.5 | 40.5 | 47.0 |
| Industry in Province of Guipuzcoa (1978) | 37 | 36 | 27 |

Source: Thomas, H. & Logan, C. (1982) "Mondragon".

The evidence would suggest that we should not expect that a Mondragon style system of ownership is the recipe for success for British cooperatives. In fact we would go one step further and suggest that a system of "buying-in" is highly undesirable. Members of cooperatives face a double risk, the loss of their job and the loss of their capital. There have been many cases where workers have lost their redundancy pay and their savings when cooperatives have failed. The Scottish Daily News is just one example. Because members will lose their jobs if a cooperative closes, cooperatives have a tendency to struggle on when a private firm would long ago have sold out to a larger company. The end result is that cooperative members end up with little or nothing when they finally cease trading.

Under present conditions, in which cooperatives are a very risky project, local authorities and other promoting bodies should not, therefore, require initial contributions from their members. This is not to say that members would not be expected to fund at least

part of future capital needs from retained earnings. Nor that individuals who initiate a cooperative on their own should be prevented from putting in their savings. Many of today's new cooperatives are, however, often initiated by local authorities, the M.S.C., Cooperative Development Agencies, etc. In these cases contributions should not be required from new members.

So far we have concentrated on one example from abroad. French and Italian cooperatives are also frequently compared with those in Britain, and are generally considered to have been a greater success. There are a number of reasons for their success, but one is certainly the partial protection of outlets afforded to cooperatives in these countries. Thornley reports that in France State contracts for building works are regulated by the Code des Marches Publics. This states that "if practicable, one quarter of the work involved in a project will be temporarily reserved for cooperatives to undertake at the average price of the other three lots."[12]

If any British government was serious in its promotion of cooperatives, then a scheme similar to the French building code should be applied to all expenditure on any item by central government, local authorities, and nationalised industries, at least. The code might possibly be expanded to all firms purchasing above a minimum value of a certain product or service. Because cooperatives would be paid the average price of the remainder of the contract, no organisation could claim that it was being forced to pay more than necessary.

There seems little doubt that, in the foreseeable future, British cooperatives will not be afforded the kind of protection proposed above. Many organisations continue to promote cooperatives, however. Such a commitment to cooperatives would seem ill advised, if not irresponsible, given the risks that cooperative members

face. The risk is not only one of losing both their job and their savings, but, as Wajcman has revealed, the experience of working in a cooperative which fails can leave the members totally demoralised.[13]

If these organisations insist on promoting cooperatives, then they must be very selective of the industries in which they operate. Declining industries such as footwear are certainly not advised. Second, sectors should be chosen which serve a broad and fragmented market, general printing being an example. It is this aspect which makes retailing (e.g. wholefoods) a good area for cooperatives.

Although our evidence does not indicate that cooperatives have been less successful than similar small businesses in maintaining employment, we have seen that many small businesses continue to survive through mergers. This puts cooperatives at a noticeable disadvantage in terms of their employment creating potential even if they do get off the ground, while many cooperatives never succeed in breaking into the market. Certainly past experience does not lead one to expect them to have any noticeable impact on the level of unemployment.[14] Why then do we have the present craze for cooperatives as part of a strategy of employment creation?

One possible answer is politics. For all parties the promotion of cooperatives is considered a vote catcher. For the Conservatives cooperatives symbolize self-help and enterprise, along with the ethos that profits are not reserved for an exclusive section of society. For the Liberals, cooperatives represent the replacement of industrial strife with harmonious production. For Labour, cooperatives stand for workers control and employment creation. All parties are, therefore, eager to list the number of cooperatives that they have set on their way.

Many of the workers who join cooperatives promoted by the M.S.C. or Local Authorities may be more concerned with finding employment than fulfilment through participation. In such cases we must ask if cooperatives are the most cost-effective scheme for employment creation. Many cooperatives require a relatively high capital input per worker, and then, as we have seen, have difficulties finding a market for their services.

There exists an alternative method of employment creation which does not face the risk of failure because it cannot break into the market. This is direct labour, which has the added advantage that it will probably require less capital input per worker than required by new cooperatives. Unfortunately there have been no studies of the comparative costs of creating one permanent job through direct labour as compared with one in a cooperative. This is a subject which needs further investigation.

At the present moment it is, of course, politically unacceptable to expand direct labour. Consequently we find local authorities using money to bolster both local firms and cooperatives. It is open to question whether this is the most efficient scheme for creating jobs.

The conclusions at the end of this section might be summed up as follows. If cooperatives are to be promoted merely as vehicles of employment, then direct labour might be a less risky and more cost effective alternative. If, however, cooperatives are to be promoted because of their potential for industrial democracy, then they must be provided with considerably more protection than at present exists in the U.K.

## 2. The Neoclassical Perspective

We only considered one neoclassical study which dwelt specifically on the position of cooperatives within capitalism. This was the paper by Vanek on the financing of cooperatives which was described in Chapter 3.[15]

Vanek concludes at the end of his paper that all cooperatives should rely completely on external finance for investment. He recognises that to achieve this one could not rely on the conventional banking system. Therefore either governments or philanthropic individuals would have to provide the finance.

From our own perspective, full external finance might be considered desirable for two reasons. First, it does not expose members to the risk of losing their savings. Second, it might reduce the level of self-exploitation which goes on among members of new cooperatives who are forced to reinvest a large proportion of their income.

In reality, the money is not likely to be forthcoming from either governments or philanthropists, and, inevitably, cooperatives, like other small businesses, will be thrown back on internal finance. We would argue that the consequences of internal financing are likely to be much less damaging than Vanek suggests.

First, Vanek's analysis is based on the static income maximising theory of the labour managed firm. In fact firms are likely to obey pressures to maintain their position in the market. Therefore, in conditions in which pure income maximisers might choose to shrink, real cooperatives would probably do the reverse.

Vanek's analysis is based on the standard neoclassical assumption that firms are price takers, i.e. if they set their price at the level

set by their competitors, then they are sure to sell their output. If however, cooperatives cut back production they are likely to face two problems. First, competitors who are able to supply a larger order, and a wider range of products, are likely to steal their orders. Second, their weakening market strength will force them to accept a lower price for their product. The empirical evidence presented in Chapter 6 gave no support to Vanek's predictions of self-extinction by cooperatives.

Apart from the self-extinction forces, Vanek also describes the under-investment force. We have dealt with this problem in the L.M.E. in Chapter 10. In a capitalist economy the position is different, for we cannot expect the rate of interest to adjust downwards to compensate for this effect. Even so, the effect is likely to be diluted as long as there are enough members of the cooperative who expect to stay in the cooperative for longer than the productive life of the investment.

Cowling has raised the spectre of cooperative profits being entirely absorbed by finance capital "By converting from industrial to finance capital, capitalists could avoid the increasing conflict in the process of production and retire into a position of supplying capital at arm's length to worker-controlled enterprises."[16] There could be a danger that Vanek's philanthropists or government agencies could come to play just a role, charging excessive interest rates on the grounds that the cooperatives are not putting up any funds.

This might be another good reason for cooperatives to avoid external finance. Even without external finance, however, it is quite possible for large capitalists to squeeze all spare cash from small enterprises, both private firms and cooperatives. B.S.C. apparently did just this with small footwear manufacturers.

## THE LABOUR MANAGED ECONOMY

### 3. The Role of the market

It is a fundamental contention of the neoclassical school that the market is paramount. If the market is allowed to follow its natural course then everyone will benefit. The role of policy, therefore, must be restricted to oiling the workings of the market mechanisms. The following statement by Sirc is a good example of this position.

"One of the most important requirements of an economic system is to bring in line the interests of workers as consumers with the interests of workers as producers. In other words, the sectional interests of enterprises and their staff have to be aligned with the general interests. In the capitalist system, this adjustment is achieved through the enterprise, particularly through the private ownership of the enterprise's risk capital ... These arrangements (the workings of the market) bring the functioning of the enterprise in line with the general interest, which is that enterprises should produce goods which people, mostly workers, want at the cheapest possible prices."[17]

Sirc's statement is built on a mass of neoclassical analysis which is summed up by the concept of Pareto optimality. Two important assumptions are that (i) there is no involuntary unemployment (because

wages will fall until everyone is employed); (ii) long-term profits are zero. If either of these conditions are breached, then it must be because the market is being prevented from working freely, e.g. because of the action of trade unions or the erection of barriers to entry.

In Chapter 10 we explained why full employment could not be expected to result from the free operation of the market. The interests of the unemployed would not be served in this situation. Secondly, the analysis ignores the existence of unemployment for other reasons such as lack of child care and racial or sex prejudice. Furthermore, once the concept of marginal productivity is brought into question , then even with full employment we cannot rely on the market to allocate resources to their most highly valued uses. We must not, therefore, rely on the market to pull the economy in directions which will be in the long-term interest of the majority of the population. This applies to both capitalist and labour managed economies.

The consumers in a capitalist economy will, however, be at an added disadvantage to those in a labour managed economy, even if they are in employment. We illustrated in Chapter 9, that the system of private capital ownership, in which profits are earned by capitalists for indefinite periods, will leave important decisions (such as the aggregate rate of investment) in the hands of a small number of capitalists.

We would suggest, therefore, that Sirc is wrong to state that the capitalist system serves the general interest. In the same paper Sirc argues that a labour managed system cannot serve the general interest because of the nature of the collective ownership of capital. Our analysis in Chapter 9 would indicate that an L.M.E. would be more

successful than a capitalist economy in serving the general interest. As we have just noted, however, the market cannot be relied upon to serve the interests of the entire community.

The tendency among most writers on labour management is to assume that as long as the market system is made to work perfectly, then the L.M.E. will benefit everyone concerned. This premise derives from the discovery that the general equilibrium solution will be the same for both economies. Pareto optimality will, therefore, be achieved by improving the workings of the market. (This position is different from that of Sirc who believes that an L.M.E. could never achieve Pareto optimality). The policy prescriptions that inevitably grow out of this analysis are ones which supposedly improve the workings of the market.

For different reasons the Yugoslav authorities have tended towards encouraging the freedom of the market. Although their thinking was not based on a neoclassical analysis, there tended to be a feeling that true democracy would only be achieved when all decisions are handed over to the workers. This mood was also encouraged by the necessity of satisfying nationalist feelings, which was achieved by drastically reducing the number of decisions made at the centre. The 1965 reforms were a result of this thinking.

Whenever enterprises have been given more freedom to follow their own wishes, the authorities have soon had to move in again to reduce the growing inequalities. There is, then, implicit recognition that the market cannot serve the general interest. We believe this to be true, which inevitably leads to different policy prescriptions than found in neoclassical studies. We will look at a number of issues in turn.

(i) Capital Allocation

There is general agreement among western economists writing on Yugoslavia that the system of allocating capital is poor. The rate of interest is so low that the demand for loans well outstrips the supply. The system of rationing the limited supply of funds is not apparently based on any systematic method. Loans tend to be available for those with the right contacts, money tends to circulate within Republics, or even within communes, and is often spent on bolstering up existing enterprises which are facing bankruptcy.

Authors writing from a neoclassical perspective generally assume that it would be enough to set the interest rate free to move up to its true equilibrium, and to ensure the complete mobility of capital, so that funds find their way into the most lucrative projects. Tyson writes

> "what is needed in the Yugoslav self-management system is a set of rules that guarantees that alternative uses of capital will be judged according to a consistent measure of capital scarcity. A private ownership system with capital allocation through financial markets in which privately owned firms, individuals, and banks participate would achieve this objective. So would a system of "socialist" ownership in which the state charges firms for their use of capital and allocates the returns to capital among competing uses." 18

Our analysis in Chapter 9 indicates that the level of investment chosen by firms in a labour managed or capitalist system may not reflect the desires of the majority of the population. In a capitalist system the problem is more severe because only a small number of capitalists will take this decision. In an ideal L.M.E., where there is full participation by all workers, this decision will at least be based on the opinions of a broader spectrum of society. It still, however, excludes all of those who are not in paid employment.

In Yugoslavia the rate of unemployment is high for structural reasons. Many others earn low incomes in peasant agriculture. These groups may justifiably wish for a higher rate of investment and growth than chosen by those in paid employment. The market will not provide a mechanism for their wishes to be satisfied. In this situation the authorities would be justified in stepping in and taxing away a significant proportion of enterprise net income for re-investment elsewhere. This conclusion depends, of course, on the assumption that central and local authorities better represent the wishes of the population than does the market. An issue which is undoubtedly open to dispute.

The analysis by Furubotn and Pejovich leads to the inevitable conclusion that Yugoslav property rights should be modified so that enterprises are not required to maintain the book value of their assets. The discussion of underinvestment in Chapter 9 indicates that such a move would be totally unnecessary. Quite the reverse, Yugoslav property rights might be seen as one scheme for ensuring that those in paid employment do not squander assets which the unemployed also have rights in.

(ii) Entry of New Firms

We saw in Chapter 1 that the neoclassical analysis leads to the conclusion that, in situations where capitalist firms might earn a profit, then labour managed firms will select capital intensive techniques and so income differentials will appear. The response to this result has been to recommend the standard theoretical solution for removing profits in a capitalist system, i.e. to encourage the entry of new firms. Vanek concludes at the end of his "General Theory." "One fundamental conclusion...is the paramount importance of free and speedy entry in the labour-managed economy."[19]

This is also an important policy proposal from the labour school. They argue that income differentials arise because of both the existence of monopoly power and upward shifts in demand. Our own analysis would not disagree with this. Estrin concludes that

> "this approach would base the solution on changes in enterprise numbers, and effective anti-trust legislation. Rather than concentrating on prices and incomes policies, which merely worsen resource misallocation while acting on symptoms rather than causes, the authorities should undertake an entrepreneurial role in high-earning efficient and concentrated industries." 20

The evidence presented in this thesis would suggest that reliance on the entry of firms as the sole means of overcoming these problems would not be advisable. It is not easy for new firms to enter existing markets. Existing firms with substantial reserves can afford to undercut the new competitor in the short-run and squeeze it out of existence. Secondly, can we be sure that existing demand will be able to absorb the increased supply? The end result of new entry might be exit of the new or old firm. (This would not be true of Yugoslavia where firms apparently never exit). Lastly, reliance on entry of new firms would be an extremely slow and drawn out scheme for reducing inequalities.

Although we would not deny the contribution which new firms might make, this should not be relied on as the only policy to overcome inequalities of income. Estrin shies away from income policies for the standard neoclassical reason, i.e. there will be a misallocation of resources if incomes do not equal the value of labour's marginal product. Unfortunately we believe that resources will never be allocated in the perfect manner envisaged by neoclassical economists. In reality, production methods are likely to be fairly inflexible, while the demands of maintaining a position in the market will prevail over short-run maximising objectives.

The imposition of an incomes policy is unlikely to make the misallocation worse. Some form of incomes policy, e.g. taxing away a proportion of above average income, will probably be the only effective method of reducing income inequalities.

(iii) Macro Economic Policies

Only two people, Ward and Vanek, have attempted to construct a macro economic model from a base grounded in the theory of the labour managed firm.[21] Vanek has made two attempts, but we will only consider his later version, because Vanek believes that both his first attempt and Ward's work were inadequate.

In his second paper Vanek develops a macro economic model following the standard geometric interpretation of Keynes's General Theory. The major difference that Vanek proposes between a capitalist and labour managed economy is in the aggregate production function. Vanek claims that in an L.M.E. in the short-run,

> "the levels of employment and output can largely be taken as constants, fundamentally determined by long-range processes of growth and not subject to short-run forces." 24

Keynesian models assume the opposite, i.e. that national output can be adjusted in the short-run.

How does Vanek justify this contention? Vanek refers to standard short-run theory of the L.M.F., i.e. that cooperatives would lay off workers when demand rises. He comments that

> "over short periods, with increasing prices, it would be absurd for the working collective to fire some of its members in order to increase the remaining workers' incomes."

Vanek's conclusion does not, however, fit the data presented in Chapter 4, which illustrated that the C.P.F. cooperatives tended to expand the labour force when aggregate demand increased.

The constancy of employment may have some slight plausibility when considering increases in demand, but certainly not for falling demand. In this situation Vanek relies on the inflexibility of technology. If demand falls then neoclassical theory predicts that the L.M.F. will expand output. Vanek thinks this unlikely because of fixed proportions in the short run.

We would argue that not only would L.M.F.'s not expand employment when aggregate demand falls, in fact employment will inevitably fall. Vanek's position is a consequence of applying micro economic analysis to macro economic issues. His assumption that employment will be maintained is derived from the neoclassical position that as long, as prices adjust sufficiently, the economy will inevitably return to full employment. All the enterprise must do, therefore, is to lower prices until they can sell all their output. His analysis leads him to the conclusion that changes in monetary and budget policy will predominantly work through into prices.

Vanek's method ignores the possibility that effective demand may fall to the point where any achievable drop in prices (i.e. not so large as to reduce workers to the point of starvation) will leave goods unsold. Second, he ignores the multiplier effect that the fall in prices, and therefore in workers' incomes, will have on effective demand.

Vánek concludes from his analysis that unemployment will not be reduced by monetary or budgetary policies, but that on the other hand,

> "the comparative short-run inertia of real product has the great advantage of virtually eliminating the danger of short-run recessions of the type we have in Western economies." 25

The discussion in Chapter 10 leads to exactly the opposite conclusion. We argued that, although the L.M.E. should not inevitably tend to the deep economic crises suffered by capitalist economies, that it would certainly suffer from short-run recessions. These recessions would be a consequence of a slump in effective demand. The remedy would be an expansion of government expenditure.

It is a peculiarity of Yugoslavia that public expenditure is divided among so many regional and local bodies that budgetary measures to regulate demand are virtually impossible to co-ordinate. This is probably a result of the need to satisfy demand for autonomy among the various Yugoslav nationalities. It should not be considered as an inevitable consequence of labour management.

We have earlier argued that the market should not be relied on to serve the general interest. Nor should it be looked to to reduce income inequalities. Now we suggest that the government should maintain control of a significant proportion of national income in order to regulate effective demand. These conclusions suggest that an L.M.E. would benefit from being mixed, with a considerable part of production planned from the centre and employing workers at fixed wage rates. This need not, of course, exclude workers control over other conditions of work.

Outside of this "public industry" labour-managed enterprises could be encouraged in sectors which are less prone to concentration and high profits. Such enterprises could work both in sectors not served by public firms, and in competition with public industries.

There should, however, exist a tax system designed to syphon off a proportion of excess profits earned by labour managed firms.

The conclusions contained in this final section are derived from the analysis presented in Chapters 9 and 10. Like most Western theories of labour management, this analysis has not been tested empirically. If the conclusions in this section were to be offered as serious policy recommendations, then the analysis would first have to be subject to empirical verification.

FOOTNOTES TO THE CONCLUSION

1. See for example:-

   (a) O'CONNOR, R. and KELLY, P. (1980) "A Study of Industrial Workers' Co-operatives." The Economic and Social Research Institute, Dublin.

   (b) THORNLEY, J. (1981) "Workers' Co-operatives." Heinemann Educational Books.

2. CHAPLIN, P. and COWE, R. (1977) "A Survey of Contemporary British Worker Co-operatives." Manchester Business School. Working Paper Series 36.

3. THORNLEY, J. (1981) As above.

4. See for example:-

   (a) O'CONNOR, R. and KELLY, P. (1980). As above.

   (b) THE LABOUR PARTY (1980) "Workers Cooperatives." A Labour Party Discussion Document.

5. WALES T.U.C. (1981) "Co-operation and Job Creation in Wales: A Feasibility Study."

6. O'CONNOR, R. and KELLY, P. (1980) As Above.

7. CAMPBELL, A. (1980) "Polish Mondragon." Scottish Co-operative Development Committee.

8. OAKESHOTT, R. "Piecemeal." In CLAYRE, A. (ed.) (1980) "The Political Economy of Co-operation and Participation." Oxford University Press.

9. THOMAS, H. and LOGAN, C. (1982) "Mondragon: An Economic Analysis." George Allen & Unwin.

10. THOMAS, H. and LOGAN, C. (1982) As above.

11. THOMAS, H. and LOGAN, C. (1982) As above.

12. THORNLEY, J. (1981) As above.

13. WAJCMAN, J. (1983) "Women in Control." Open University Press.

14. WILSON estimates that in 1980 worker cooperatives in the U.K. only constituted 0.1% of employment in the small business sector. See:-

    WILSON, N. "Economic Aspects of Worker Co-operatives in Britain." in THE PLUNKETT FOUNDATION (1980) "Seventh Cooperative Seminar, Part 3. The Economics of Worker Co-operatives."

15. VANEK, J. "The Basic Theory of Financing of Participatory Firms." In VANEK, J. (ed.) (1975) "Self-Management." Penguin.

16. COWLING, K. (1982) "Monopoly Capitalism." Macmillan.

17. SIRC, L. "Peter Jay's Project in the Light of Yugoslav Experience." in CLAYRE, A. (ed.) (1980) As above.

18. TYSON, L.A. (1980) "The Yugoslav Economic System and its Performance in the 1970's." Institute of International Studies, University of California.

19. VANEK, J. (1970) "The General Theory of Labour-Managed Market Economies." Cornell University Press.

20. ESTRIN, S. (1979) "An Explanation of Earnings' Variation in the Yugoslav Self-Managed Economy." Economic Analysis, vol. 13.

21. WARD, B. (1967) "The Socialist Economy." Random House.

22. VANEK, J. (1970) As above.

23. VANEK, J. (1972) "The Macroeconomic Theory and Policy of an Open Worker-Managed Economy." Ekonomska Analiza, vol. 3. Reprinted in VANEK, J. (1977) "The Labor-Managed Economy." Cornell University Press.

24. VANEK, J. (1972) As above.

25. VANEK, J. (1972) As above.

# APPENDIX 1

## Under-Investment in the Labour-Managed Firm

$$\text{Let } Z^N = \left\{ \frac{1}{(1+i)} + \frac{1}{(1+i)^2} + \ldots + \frac{1}{(1+i)^N} \right\} \tag{A1.1}$$

$$\therefore \quad = \frac{(1+i)^{N-1} + (1+i)^{N-2} + \ldots + (1+i) + 1}{(1+i)^N} \tag{A1.2}$$

$$\text{and } Z^{N-1} = \frac{(1+i)^{N-2} + (1+i)^{N-3} + \ldots + (1+i) + 1}{(1+i)^{N-1}} \tag{A1.3}$$

$$\therefore \quad \frac{Z^N}{Z^{N-1}} = \frac{(1+i)^{N-1} + (1+i)^{N-2} + \ldots + (1+i) + 1}{(1+i)^{N-2} + (1+i)^{N-3} + \ldots + (1+i) + 1} \times \frac{1}{(1+i)} \tag{A1.4}$$

$$\therefore \quad \frac{Z^N}{Z^{N-1}} = \frac{(1+i)^{N-2} + (1+i)^{N-3} + \ldots + 1 + \frac{1}{(1+i)}}{(1+i)^{N-2} + (1+i)^{N-3} + \ldots + (1+i) + 1} \tag{A1.5}$$

$$\therefore \quad \frac{Z^N}{Z^{N-1}} > 1$$

Thus $Z^{N-1} < Z^N$, and similarly $Z^{N-2} < Z^{N-1}$ and so on.

$\therefore \quad Z^H < Z^N$ as long as $H < N$.

# APPENDIX 2

## Long-Run Adjustments

### (1) Comparing the C.F. and L.M.F. capital/labour ratio

When the C.F. is earning zero profits at output price Pxo it has a capital/labour ratio of (Ko/Lo) and output of Xo. The L.M.F. works at exactly the same scale and factor proportions. When price increases by $\delta Px$ from Pxo to Px1 then we can compare the new capital-labour ratios chosen by the two enterprises, (K/L)c and (K/L)s respectively

$$\left(\frac{K}{L}\right)_s - \left(\frac{K}{L}\right)_c = \frac{K + \delta Ks}{K + \delta Ls} - \frac{K + \delta Kc}{L + \delta Lc} \qquad (A2.1)$$

$$= (KL + K\,\delta Lc + L\,\delta Ks + Ks\,\delta Lc - KL - L\,\delta Kc - K\,\delta Ls - \delta Ls\,\delta Kc) \times \frac{1}{(L + \delta Ls)(L + \delta Lc)} \qquad (A2.2)$$

Unless either of the firms are reduced to a zero labour force, then the denominator of (A.1) must be positive. To find the sign of (A.1) it is only necessary, then, to determine the sign of the numerator. The numerator, N, may be simplified to,

$$N = K(\delta Lc - \delta Ls) + L(\delta Ks - \delta Kc) + \delta Lc(\delta Ks - \delta Kc) + \delta Kc(\delta Lc - \delta Ls).$$

So, using equation (2.18) in Chapter 2, and substituting in the function $g\left(\delta Y\Big|_{\bar{P}x}\right)$ described in (2.20), then

$$N = K\left(-g\left(\delta Y\Big|_{\bar{P}x}\right)\frac{a_{11}}{P|A|} + L\left(+g\left(\delta Y\Big|_{\bar{P}x}\right)\frac{a_{1k}}{P|A|} + \left\{g\left(\delta Y\Big|_{\bar{P}x}\right)\left(\delta Lc\,\frac{a_{1k}}{P|A|} + \frac{\delta Kc(-a_{11})}{P|A|}\right)\right\}\right) \qquad (A2.3)$$

$$\therefore \quad N = \frac{g\left(\delta Y\Big|_{\bar{P}x}\right)(La_{1k} - Ka_{11}) + g\left(\delta Y\Big|_{\bar{P}x}\right)(a_{1k}\,\delta L_c - a_{11}\,\delta K_c)}{P|A|} \qquad (A2.4)$$

Now we need to determine the sign of $(La_{1k} - Ka_{11})$ and $(a_{1k}\,\delta Lc - a_{11}\,\delta Kc)$. Without going through all the operations here, it can be shown that the latter term may be reduced to the negative of $2|A|$ which must be positive since for a three input function $|A| < 0$.

It is necessary to impose a condition slightly stricter than a concave production function to determine the sign of $(La_{1k} - Ka_{11})$.

We know from (2.19 ) in Chapter 2 that

$$\frac{\delta K}{\delta w}c = \frac{a_{1k}}{P|A|} \qquad \text{(A2.5)}$$

$$\frac{\delta L}{\delta w}c = \frac{a_{11}}{P|A|} \qquad \text{(A2.6)}$$

Thus, the change in the capital/labour ratio of the C.F. as a result of a change in w may be written as

$$\frac{K + \delta K}{L + \delta L} - \frac{K}{L} = \frac{LK + L\,\delta K - KL - K\,\delta L}{L\,(L + \delta L)} \qquad \text{(A2.7)}$$

$$= \frac{L\,\delta K - K\,\delta L}{L\,(L + \delta L)} \qquad \text{(A2.8)}$$

$$= \frac{La_{1k} - Ka_{11}}{L(L + \delta L)\,P|A|} \qquad \text{(A2.9)}$$

Once again $L\,(L + \delta L)$ may be taken as positive. Therefore, if the capitalist firm increases its (K/L) ratio when w increases then

$$\frac{(La_{1k} - Ka_{11})}{P|A|} > 0 \qquad \text{(A2.10)}$$

And so, as long as the production function is such that the profit-maximizing capitalist firm will increase its capital/labour ratio when the wage rate increases, all other prices held constant, then a rise in the price of the product will increase $(K/L)$s more than

$(K/L)c$ depending on whether $g(\delta y|_{\bar{P}_x})$ is positive or negative.

(2) A Decrease in input prices

In Chapter 2 I have suggested that an increase in capitalist profits resulting from an increase in the product price Px need not be distinguished from the case where input prices (not including wages) decrease.

Suppose capitalist profits increase as a result of the drop in the rental price of capital, Pk, totally differentiating the first order conditions with respect to Pk,

$$\begin{bmatrix} F_{kk} & F_{km} & F_{kl} \\ F_{mk} & F_{mm} & F_{ml} \\ F_{lk} & F_{lm} & F_{ll} \end{bmatrix} \begin{bmatrix} \frac{K}{P_k} \\ \frac{M}{P_k} \\ \frac{L}{P_k} \end{bmatrix} = \begin{bmatrix} \frac{1}{P_x} \\ 0 \\ 0 \end{bmatrix} \quad \text{or} \quad \begin{bmatrix} \frac{1}{P_x} \\ 0 \\ \frac{-K}{PxL} \end{bmatrix} \qquad \text{(A2.11)}$$

for the C.F. for the L.M.F.

and so,

$$\frac{\delta K}{\delta P_k}s - \frac{\delta K}{\delta P_k}c = -\frac{K}{PxL}\frac{a_{1k}}{|A|} = -\left(\frac{K}{L}\right)\frac{\delta K_c}{\delta w}\Big|_{\bar{P}_k} \qquad \text{(A2.12)}$$

$$\frac{\delta L}{\delta P_k}s - \frac{\delta L}{\delta P_k}c = \frac{-K}{PxL}\frac{a_{11}}{|A|} = -\left(\frac{K}{L}\right)\frac{\delta K}{\delta w}c\Big|_{\bar{P}_k} \qquad \text{(A2.13)}$$

(A2.12) and (A2.13) are very similar to (2.18 ) and in Chapter 2 except that (-K/L) has replaced (F/L). As with an increase in Px, (A2.12) and (A2.13) may be re-written as

$$\frac{\delta K_s}{\delta P_k} - \frac{\delta K_c}{\delta P_k} = -h(\delta Y|_{\bar{P}_k})\frac{\delta K}{\delta w}c\Big|_{\bar{P}_k} \qquad \text{(A2.14)}$$

$$\frac{\delta L_s}{\delta P_k} - \frac{\delta L_c}{\delta P_k} = -h(\delta Y|_{\bar{P}_k})\frac{\delta L}{\delta w}c\Big|_{\bar{P}_k} \qquad \text{(A2.15)}$$

The function h is negative because a decrease in $P_k$ will be equivalent to an increase in $P_x$. Now the functions (A2.14) and (A2.15) may be substituted into (A2.1) to give,

$$N_{Pk} = \left\{-h\left(\delta Y\Big|_{P_k}\right)\left(\frac{La_{1k} - Ka_{11}}{Px\ |A|}\right)\right\} -h\left(\delta Y\Big|_{P_k}\right)\left(\frac{a_{1k}\,\delta L_c - a_{11}\delta K_c}{P_x\ |A|}\right) \quad \text{(A2.16)}$$

Now for a decrease in $P_k$

$$\frac{\delta K_c}{\delta P_k} = \frac{-a_{kk}}{P_x|A|} \quad \text{and} \quad \frac{\delta L_c}{\delta P_k} = \frac{-a_{kl}}{P_x|A|} \quad \text{(A2.17)}$$

and so, $(a_{1k}\,\delta L_c - a_{11}\,\delta K_c) = (-a_{1k}\,a_{kl} + a_{11}\,a_{kk})$ (A2.18)

$$= \left\{\begin{array}{l} -\ (F_{km}\,F_{ml} - F_{mm}\,F_{kl})\ (F_{mk}\,F_{lm} - F_{lk}\,F_{mm}) \\ +\ (F_{kk}\,F_{mm} - F_{km}\,F_{mk})\ (F_{mm}\,F_{ll} - F_{lm}\,F_{ml}) \end{array}\right\} \quad \text{(A2.19)}$$

$$= \left\{\begin{array}{l} -\ F_{km}\,F_{ml}\,F_{mk}\,F_{lm} + F_{km}\,F_{ml}\,F_{lk}\,F_{mm} + F_{mm}\,F_{kl}\,F_{mk}\,F_{lm} - F_{mm}\,F_{kl}F_{lk}F_{mm} \\ +\ F_{kk}\,F_{mm}\,F_{mm}\,F_{ll} - F_{kk}\,F_{mm}\,F_{lm}\,F_{ml} - F_{km}\,F_{mk}\,F_{mm}\,F_{ll} + F_{km}F_{mk}F_{lm}F_{ml} \end{array}\right\} \quad \text{(A2.20)}$$

The first and last terms of (A2.20) cancel to leave,

$$F_{mm}(+F_{km}F_{ml}F_{lk} + F_{kl}F_{mk}F_{lm} - F_{kl}F_{lk}\,F_{mm} + F_{kk}F_{mm}F_{ll} - F_{kk}F_{lm}F_{ml} - F_{km}F_{mk}F_{ll}) \quad \text{(A2.21)}$$

$$= F_{mm}\,(+F_{kk}(F_{mm}F_{ll} - F_{lm}F_{ml}) - F_{km}(F_{mk}F_{ll} - F_{ml}F_{lk}) + F_{kl}\,(F_{mk}\,F_{lm} - F_{lk}F_{mm}) \quad \text{(A2.22)}$$

$$= F_{mm}\ (|A|) \quad \text{(A2.23)}$$

From the standard theory of the firm it is known that $|A|$ must be negative definite, and for a three input production function this requires that $|A| < 0$, we also know that $F_{mm} < 0$, and so the sign of (A.2.23)must be positive.

Returning to (A.2.16) it was shown earlier that $(La_{1k} - Ka_{11})/P_X|A| > 0$ when the production function is such that the C.F. will increase its (K/L) ratio when w increases. And so we can see that,

$$N P_k \gtreqless \text{as} \quad -h \left( \delta\gamma \Big|_{\bar{P}_k} \right) \gtreqless 0 \qquad \text{(A2.24)}$$

Thus, as $P_k$ decreases, (i.e. profits increase) then $NP_k$ increases, i.e. $(K/_L s)$ will increase relative to $(K/_L c)$, which is exactly the same result as for an increase in $P_x$. Exactly the same result may be derived for a decrease in $P_m$.

(3) The L.M.F. holds labour constant

It was pointed out that in some cases the equation (2.21) in Chapter 2 will be able to incorporate the possibility that the L.M.F. decided to hold L constant, but, given that constraint, will attempt to maximize net income per worker. However, depending on the values of $F_{kl}$ and $F_{ml}$, then Eym in Diagram 2.1 may lie to right of $E_o$, and if the L.M.F. is to keep L fixed then it must choose a scale below that which would maximize Y. Whether the equilibrium output with L constant ($E_{lc}$) is above or below the output which maximizes Y, it can be shown that $(K/_L s) > (K/_L c)$ as long as the L.M.F. aims to maximize the net income of this group of workers.

To make the proof easier, the production function will be reduced to $F = F(K,L)$. For a capitalist firm, totally differentiating the first order conditions with respect to $P_x$ gives,

$$\begin{bmatrix} F_{kk} & F_{kl} \\ F_{lk} & F_{ll} \end{bmatrix} \begin{bmatrix} \frac{\delta K}{\delta P_x} \\ \frac{\delta L}{\delta P_x} \end{bmatrix} = \begin{bmatrix} -\frac{F_k}{P_x} \\ -\frac{F_l}{P_x} \end{bmatrix} \qquad \text{(A2.25)}$$

$$\therefore \quad \frac{\delta K_c}{\delta P_x} = \frac{(-F_k F_{ll} + F_l F_{kl})}{P_x (F_{kk} F_{ll} - F_{lk}^2)} \qquad \text{(A2.26)}$$

$$\frac{\delta L_c}{\delta P_x} = \frac{(-F_l F_{kk} + F_k F_{lk})}{P_x (F_{kk} F_{ll} - F_{lk}^2)} \qquad \text{(A2.27)}$$

For the L.M.F. with fixed L, then only the first order condition $F_k = P_k/P_x$ need be differentiated, to give

$$F_{kk} \frac{\delta K}{\delta P_x} s = \frac{-P_k}{P_x^2} = \frac{-F_k}{P_x} \qquad \text{(A2.28)}$$

$$\therefore \quad \frac{\delta K}{\delta P_x} s = \frac{-F_k}{F_{kk} P_x} > 0 \qquad \text{(A2.29)}$$

The difference between the two (K/L) ratios may be written as,

$$\frac{K + \delta K_s}{L} - \frac{K + \delta K_c}{L + \delta L_c} = \frac{L \delta K_s + K \delta L_c - L \delta K_c + \delta K_s \delta L_c}{L (L + \delta L_c)} \qquad \text{(A2.30)}$$

Taking the denominator of (A2.30) as positive, then the numerator may be written as

$$N = L \delta K_s + \delta L_c \delta K_s + \frac{(-K F_l F_{kk} + K F_k F_{lk}) - (-L F_k F_{ll} + L F_l F_{kl})}{P_x (F_{kk} F_{ll} - F_{lk}^2)}$$

$$= \delta L_c \delta K_s + \frac{(-L F_k)(F_{kk} F_{ll} - F_{lk}^2) + (F_{kk})(-K F_l F_{kk} + K F_k F_{lk} + L F_k F_{ll} - L F_l F_{kl})}{P_x F_{kk} (F_{kk} F_{ll} - F_{lk}^2)}$$

$$= \delta L_c \delta K_s + (-L F_k F_{kk} F_{ll} + L F_k F_{lk}^2) + (-K F_l F_{kk}^2 + K F_k F_{lk} F_{kk} + F_{kk} L F_k F_{ll} - L F_{kk} F_l F_{kl}) \frac{1}{P_x F_{kk} (F_{kk} F_{ll} - F_{lk}^2)} \qquad \text{(A2.31)}$$

$$= \delta L_c \ \delta K_s + \frac{(F_k F_{1k}(L F_{1k} + K F_{kk}) - F_1 F_{kk}(K F_{kk} + L F_{kl})}{F_{kk} P_x (F_{kk} F_{11} - F_{1k}^2)} \qquad \text{(A2.32)}$$

$$= \delta L_c \ \delta K_s + \frac{(F_k F_{1k} - F_1 F_{kk})(L F_{1k} + K F_{kk})}{P_x F_{kk} (F_{kk} F_{11} - F_{1k}^2)}$$

$$\therefore \quad = \delta L_c \ \delta K_s + \frac{\delta L_c}{\delta P_f} \frac{(L F_{1k} + K F_{kk})}{P_x F_{kk} (F_{kk} F_{11} - F_{1k}^2)} \qquad \text{(A2.33)}$$

It was shown in (A.2.29) that $\delta K_s > 0$, so, as long as we assume that L is not an inferior factor, i.e. L will be increased by the C.F. when product price increases, that is $\delta L_c > 0$, then the left-hand term in (A.2.33) must be positive.

The term $(L F_{1k} + K F_{kk})$ is equivalent to (A2.9) and will be negative as long as the production function is such that the C.F. would increase its (K/L) ratio when w increases and other prices remain constant. Since $F_{kk} < 0$ and $(F_{kk} - F_{11} - F_{1k}^2) > 0$, and, if L is not inferior, then $\delta L_c > 0$, then the final term of (A2.33) must also be positive.

Therefore $N > 0$, i.e. the (K/L) ratio of the L.M.F. will be greater than the C.F. (K/L) ratio.

# APPENDIX 3

## The Data

### 1. C.P.F. Cooperatives

The information on the C.P.F. cooperatives was collected from their annual returns to the Cooperative Union, Holyoake House, Hanover Street, Manchester. Yearly annual returns were only available from 1965 onwards. Prior to 1965 the Cooperative Union had only retained the annual returns for every fifth year. The returns for intervening years had been deposited in the archives of Birmingham Public Library. Unfortunately they were not available for inspection. The missing data was replaced by records from the "Annual Co-operative Statistics" published by the Cooperative Union. The information recorded in these statistics was less detailed. For example, fixed assets, were only recorded at their written down value. Therefore the value of depreciation could not be distinguished from the cost of purchase.

Data was also collected from the annual returns made by the cooperatives to the Registrar of Friendly Societies, 17 North Audley Street, London. The Registrar holds annual returns for cooperatives going back ten years. The last ten years of returns for cooperatives which have died were also available. This made it possible to collect detailed information on some cooperatives before 1965. The Registrar of Friendly Societies also has copies of the cooperatives' rule books.

Forty-four producer cooperatives made returns to the Cooperative Union in 1950. Twelve of these were not included in the survey, either because they went into liquidation soon after 1950, or because less than 50% of the workforce were members of the cooperative in 1950. The remaining thirty-two cooperatives are described in Table 1.

TABLE I. C.P.F. COOPERATIVES INCLUDED IN THE SURVEY

| Number of Cooperatives | Industry | Size of Workforce in 1950 | | |
|---|---|---|---|---|
| | | Smallest | Largest | Average |
| 15 | Footwear | 37 | 445 | 124 |
| 10 | Printing | 15 | 180 | 64 |
| 4 | Clothing | 90 | 1273 | 678 |
| 1 | Lockmakers | - | - | 466 |
| 1 | Carriage Builders | - | - | 60 |
| 1 | Bass Dressers | - | - | 13 |

Most of the cooperatives included in the survey operated in the Midlands. The towns in which they were based are listed in Table 2. Eleven of the cooperatives were located in Northamptonshire (8 of these were in footwear). Another seven cooperatives were in Leicestershire. The other cooperatives (mainly printers) were spread throughout England, with one printers in Wales.

TABLE 2 LOCATION OF C.P.F. COOPERATIVES

| FOOTWEAR | | PRINTING | | CLOTHING | |
|---|---|---|---|---|---|
| No. | Town | No. | Town | No. | Town |
| 4 | Leicester | 1 | Bristol | 2 | Kettering |
| 2 | Kettering | 1 | Gloucester | 1 | Wellingborough |
| 1 | Sileby | 1 | Watford | 1 | Wigston |
| 1 | Desborough | 1 | Hull | | |
| 1 | Higham Ferrers | 1 | Nottingham | OTHERS | |
| 1 | Rothwell | 1 | Derby | No. | Town |
| 1 | Raunds | 1 | Birmingham | 1 | Walsall |
| 1 | Wellingborough | 1 | Leicester | 1 | Leicester |
| 1 | Wollaston | 1 | Swansea | 1 | Not known |
| 1 | Chesham | 1 | Plymouth | | |
| 1 | Stafford | | | | |

2. The Sample of Capitalist Firms

The sample of capitalist firms was selected from the 1950 Stubbs Directory, which was available in the Mitchell Library, Glasgow. The Directory listed firms by product, and, within product categories, by town. Nearly all of the sample of cooperatives were located in the Stubbs Directory. A sample of 8 firms (2 samples of 4) were chosen for each cooperative. Each firm was included under the same product heading as the cooperative that it represented. Wherever possible, the firms chosen also operated in the same town as the cooperative. In most cases this proved possible, but occasionally firms from towns nearby had to be included.

Unfortunately the Stubbs Directory did not report the size of firms' workforces. Consequently it was not possible to select firms of a similar size to the cooperatives. Where firms were known to be large, or appeared to be so from the style of their entry in the Directory, they were avoided. The sample of firms was selected at random from those remaining which satisfied all the conditions of product, town and size. It was not possible to choose eight bass dressers because only five were reported in the Directory. All five were followed up (Three of these have now merged into one firm, and the other two are no longer trading).

The annual returns of companies which had been wound up more than five years ago were inspected at the Registrar of Companies, City Road, London. Live companies, and those recently dead, were followed up at Companies House, Crown Way, Maindy, Cardiff.

It is not possible to compare the size range of the cooperatives and the sample of capitalist firms in 1950, because private firms were not required to report the size of their workforce until 1967. Even after 1967, the number of employees only had to be reported by firms employing more than 100 persons. Figures on employment among footwear firms in Leicester and Northamptonshire were provided for some years by both the Northamptonshire and the Leicester and County Footwear Manufacturers' Associations.

The size of live footwear firms (for which data is available) is compared with live footwear cooperatives in 1968 in Table 3.

TABLE 3. FOOTWEAR COOPERATIVES & FIRMS: WORKFORCE IN 1968

| Cooperatives (Total of 4) | | | Capitalist Firms (Total of 15) | | |
|---|---|---|---|---|---|
| Smallest | Largest | Average | Smallest | Largest | Average |
| 71 | 197 | 128 | 50 | 590 | 218 |

On average the capitalist firms were larger in 1968, and covered a wider size range. Even so, all of these enterprises would normally be considered "small". The sample of capitalist firms managed to exclude firms whose size might have made their experience very different from that of cooperatives. This appeared to be also true of firms not producing footwear. Unfortunately, there is insufficient data on employment to make a comparison of the sort in Table 3 for other products.

## 3. The I.C.C. Sample

It was felt necessary to increase the sample of capitalist firms in later years. New samples of clothing and footwear firms were therefore selected from Inter-Companies-Comparisons Business Ratio Reports on Footwear and Clothing Manufacturers. These had the added advantage of usually including information on the number employed. Unfortunately the I.C.C. Reports on Printers had not been published long enough to be of use. Old copies of the Business Ratio Reports were inspected at the I.C.C. Offices, 28-42 Banner Street, London, EC1.

The I.C.C. Business Ratio Reports provide information on the largest companies in an industry. The method of selecting the sample was, therefore, simply to select the smallest firms included in the report (as measured by workforce size). Fourteen footwear firms were

chosen and fifteen clothing firms. They are compared with the cooperatives and the original sample of capitalist firms in Tables 4 and 5. Figures for employment were not available for all firms in every year.

TABLE 4 WORKFORCE IN 1978: FOOTWEAR

| | Number | Smallest | Largest | Average |
|---|---|---|---|---|
| Cooperatives | 4 | 66 | 210 | 119 |
| Original Sample C.F. | 15 | 40 | 533 | 224 |
| I.C.C. Firms | 12 | 172 | 419 | 276 |

TABLE 5 WORKFORCE IN 1978: CLOTHING

| | Number | Smallest | Largest | Average |
|---|---|---|---|---|
| Cooperatives | 2 | 89 | 640 | 315 |
| Original Sample C.F.* | - | - | - | - |
| I.C.C. Firms | 14 | 162 | 1065 | 361 |

*Size of Workforce not reported in annual returns, except for two, employing 331 and 308 in 1978. The other firms presumably employed less than 100 workers.

The sample of I.C.C. firms tended to be larger than the cooperatives in 1978, although not dramatically so. The I.C.C. firms were geographically more spread out than the cooperatives, especially those in clothing. The majority of British footwear manufacturers are based in the Midlands, so that geographical differences should be less important for this sample.

4. Ownership of firms

The Ultimate Holding Companies of firms are reported in their annual returns to Companies House. The nature of parent companies was ascertained from various trade directories. Fellow subsidaries were located in "Who Owns Whom".

The parent companies of the I.C.C. sample were usually reported in the I.C.C. Reports, but this was cross-checked with "Who Owns Whom".

Subsidaries of the sample of capitalist firms were often reported in the company's annual return to the Registrar of Companies. The nature of the subsidary companies was discovered by referring to trade directories. Unreported subsidaries were sometimes traced in "Who Owns Whom". Unfortunately, this publication does not achieve comprehensive coverage of smaller firms. Some subsidaries of the sample of capitalist firms may, therefore, have been missed.

5. Labour

In all cases the size of the workforce was simply measured as number of persons employed. It was not possible to break this figure down into full-time and part-time work, or by sex, because this information was not reported in the annual returns of either cooperatives or capitalist firms. Both variables would be very important in the determination of the average wage rate paid by the enterprise. The absence of this information was, therefore, a serious short-coming of the data.

Industry wage averages were derived in the same way, i.e. by dividing the total wage bill reported in the Census of Production, by the total workforce.

## 6. Capital

There is no satisfactory way to measure the neoclassical concept of capital. Several alternatives were tried, i.e. plant and machinery, with and without land and buildings, before and after devaluation. Where assets were revalued, earlier figures were adjusted to their equivalent value following revaluation. The method of adjustment used was imperfect. All values prior to revaluation were adjusted by the amount that values changed in the year of revaluation. This did not allow for the fact that the value of assets (and therefore the amount by which they should be revalued) changed from year to year. Fortunately, revaluations did not occur often in the data, and usually only applied to land and buildings.